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An Address.1

By F. L. DAVIES,

Retiring President of the Victorian Branch of the British Medical Association.

At the end of a year's office as President I wish to take this opportunity of expressing my thanks and appreciation to all those who have been in any way associated with me for that period of time. To all members of the council I tender my best thanks for cordial support and help at all times, especially mentioning my fellow office bearers. It is with regret that the resignation of Dr. F. Kingsley Norris from the position of honorary secretary is recorded, and every wish of success in his new sphere of activity is given to him. This Branch of the

Association is fortunate in its medical secretary; with Dr. C. H. Dickson holding the position he does, the work of the President is made very much less arduous than it otherwise might be. To him and to the members of the office staff I tender my thanks.

The practice of medicine may be said to be carried on by two groups of practitioners: (i) the specialist group (in which all full-time paid appointments are included) and (ii) the general practitioner group. The latter group comprises the majority of practitioners. There is a very great tendency at the present time for members of the first group to specialize from the date of their graduation. In some respects this state of affairs may appear inevitable; but there are several cogent arguments against it. In former times general practice was the training school for most specialists, for therein they have opportunities of acquiring increased efficiency in their work which will arise in no other sphere of medical activities. Here the

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¹ Delivered at the annual meeting of the Victorian Branch of the British Medical Association on December 6, 1939.

medical man enters into a much closer relationship with all phases of family life than he can in any other form of practice. He not only is called in and consulted in all medical difficulties as they arise, but he is informed of many incidents and difficulties or pleasures that fall in the way of his patients, he is expected to share in their happiness and is very often made a confidant in their troubles. In this way he gets an understanding of humanity that cannot be acquired to such a degree without home visitation. I can remember reading an article, I think it was by Sir Clifford Allbutt, in which he stated that it was a medical man's duty sometimes to cure, sometimes to alleviate, but always to comfort; and I believe that general practice gives opportunities of carrying out these duties more than any other form of practice. Therefore I think that some years of general practice would fit a specialist better for his work than an intensified course of post-graduate training and degrees. Having these views, I am somewhat appalled by a growing tendency in different quarters for the belittling of the work of men in general practice and for a whittling away from them of certain spheres of activity to which they should have a definite claim; general practice is not such a popular field of activity as other fields of medical work, and actions and enactments which may make it less popular will increase the number of specialists who in turn will desire to take over more of the work now done by general practitioners; thus a vicious circle will be created. Such a state of affairs will not be wholly beneficial to the community. For the most part general practitioners are those who see an illness in its earliest stage, and it is right that those engaged in general practice should be well versed in all methods of investigation and perhaps even better versed in what type of investigation should be carried out.

In hospital work—and hospitals are mainly the training ground of specialists—a great deal of investigation is done as routine and certain investigations may be carried out, although no matter what their result may be, the line of treatment will not be influenced in the slightest degree.

In private practice, economy must be considered with efficiency, and many persons, though willing to make every financial sacrifice possible in the effort to regain their health, are rightly critical of all procedures proposed; and unless definite assurances can be given that the results of such procedures may be helpful in the bringing about of recovery, they will not agree to their being done. Let me give an instance of what I mean:

Some years ago I had occasion to perform a lumbar puncture on a patient who had tuberculous meningitis, from which he died at a later date. His brother-in-law was present, helping to steady the patient during the procedure. This same brother-in-law later became very ill, but the diagnosis of his condition was uncertain. He was seen by two different consulting physicians with me, and the second one suggested that help in diagnosis might be obtained by lumbar puncture. This being put to the wife, she asked whether any finding so obtained would be helpful in any treatment towards his recovery. I had to admit that so far as I knew it would not, and

the consultant later agreed with me in what I said. The wife then said that she would not agree to lumbar puncture being carried out; she said that though her husband was very drowsy and listless she thought that he would be sufficiently conscious to realize what was being done. Remembering the case of his brother-in-law, he would think the worst of himself, and the extra depression so induced would militate against his recovery.

Whether the arguments were sound I cannot say; but the puncture was not performed and the patient is still alive and well.

In another case I was asked by a fellow practitioner to see with him a patient whom he had been called to see the previous night, when she was in great pain. This patient had a mass in the right upper quadrant of the abdomen, and he was anxious to know whether I agreed with him that an operation was necessary, and secondly, if so, whether the patient was a fit subject for an anæsthetic. At operation an inflamed distended gall-bladder was found. Later I was informed that there had been trouble over the patient with another practitioner who was a friend of the family. It appeared that the patient, who assured my friend that, no one was in attendance on her, had seen this family friend—but she said only as a friend. However, this medical friend was very annoyed about it all, as he had made arrangements for the patient to be radiologically examined by a surgeon prior to an operation.

Now I maintain that with a mass to be felt, no matter what the X ray finding suggested, an exploratory operation would have been performed; even if the X ray film suggested pyloric carcinoma an exploration would have been made to see whether it were operable, or, failing this, whether a gastroenterostomy was indicated; the same would have held with X ray evidence of gastric ulcer or any other finding. That being so, why submit the patient to the ordeal of an X ray examination and the extra expense involved when no useful purpose as regards treatment would be served?

In attending clinical meetings at the hospitals I have been amazed at the array of X ray pictures taken in a single case. If they are necessary there can be no wonder at the enormous increase in the numbers of persons seeking hospital treatment, as the expense of such treatment outside would make it prohibitive, and one can understand how the cost per bed at hospitals is steadily mounting. I think that efficiency with economy is far more likely to be learned in general practice than in any other sphere of medical activity.

Some years ago, in an effort to reduce hospital expenses, the use of ethyl chloride as an agent for inducing anæsthesia was very largely eliminated. To those who were not accustomed to use this method it made no difference; but to others it was temporarily quite a handicap. In this instance a method of economy, it seems to me, led to greater efficiency and greater safety.

Far be it from me to decry specialism in anæsthesia—it would be foolish to quarrel with my bread and butter; but I have been informed that in parts of the world, in order to create a close borough of the work, surgeons and the public are being educated to the belief that they must have the use of the most complicated methods of anæsthesia (which, I may say, are not always either efficient or economical), so that this class of work

may be taken entirely from all but specialists. My plea is not for increased complicity of methods, but for a reduction in all branches of medical work to the most simple methods consistent with efficiency, so that it will be within the power of many practitioners, and not only of a few, to render such services to the public.

In anæsthesia one sees the ordinary simple and at the same time efficient methods passed over in scorn, and very complicated methods of procedure advocated by the public and by some surgeons. Some little while ago a patient whom I was attending and who required a surgical operation, told me that a friend of hers had an operation similar to what was proposed for her and the anæsthetic had been given in bed by the nurse. I said that that was sometimes done, but that I thought the simpler the methods and the fewer the drugs used, the greater the safety and the quicker the convalescence. She grudgingly half agreed with me. A few days later there was a report in the public Press of the death of two boys from an overdose of paraldehyde given as a basal narcotic prior to operation for tonsillectomy. Of course, someone had blundered to bring this about, and unfortunately it is not the only time a somewhat similar blunder has been made; but I do think it is unnecessary for such prenarcosis to be more or less a routine measure in what should be cases of no undue The need in recent years for anæsthetic risk. "Carbogen" almost as a routine after anæsthesia in some clinics is largely brought about by the extreme degree of prenarcosis indulged in. Surely it were wiser to continue with simpler and equally efficient methods.

Because of the increased cost of professional attendance required in sickness it is essential that all members of the community should have some measure of security against this cost by some means of insurance, whereby they may have available, when required, both general practitioner service and specialist service, and provision for adequate recompense to the medical men giving the service is required. The form of national health insurance which was before us a year ago did not embody all that was necessary to give security against the cost of illness to all requiring it, and for that and other reasons was not acceptable to the general body of the medical profession in Australia. The declaration of war has necessitated the consideration of matters of much greater urgency, and for the time being all thought of national health insurance is in abeyance.

Let me here briefly discuss the actions of this Branch induced through the war. The necessity for the services of medical practitioners in the many spheres of activity brought about by the war has been under the consideration of the council. The many sacrifices made by those who served in the Great War have not been forgotten, and as a consequence certain action has been taken. After the meeting of the Federal Council held in Sydney last September, just after the declaration of war, recommendations were made to each Branch of the

Association in Australia with the hope that their adoption would mitigate to some extent the hardships imposed on those who will relinquish their civil practices and serve in any of the various spheres in which medical services are required. It is considered right and just that those who will still retain their practices and carry on their usual routine of life should cooperate in every way to help towards this end.

This may entail a considerable encroachment on their time, to a less extent on their finances; but, however great this encroachment, it will be far less than the self-denial of those on active service and infinitely less than what would be suffered if the war were lost to the Allies. Therefore the council has had no hesitation in formulating a scheme with the end in view of an approach to equality of sacrifice. The success of the scheme will depend absolutely on the support and cooperation of all There is no need to go into details of such scheme, as every member has received a circular. Schemes have also been put forward by the Royal Australasian College of Physicians and the Royal Australasian College of Surgeons; all such schemes are in no way opposed to one another, for the underlying reason and the ends in view are all the same.

You will remember that the scheme embodies two definite purposes: (i) to supplement military pay (by "military" is meant all forms of war service) and (ii) to conserve the practices of absentees. At present it is quite impossible even to hazard a guess as to how many practitioners will be required for the services and for what period of time they will be required; but it is requested and hoped that all practitioners will link themselves up with one of the schemes, both for the purpose of helping others and possibly for their own protection, especially in the conservation of their practices.

The practice of medicine, and therefore the practice of a doctor, is continually changing; and in looking back one notices a great difference both in specialist work and in general practice. One of the outstanding features in the work of men engaged in general practice is the great falling off in midwifery work amongst their patients as compared with that up to twenty years ago. It is true that the practice of obstetrics has become more specialized during that period of time; and with such specialization, as with specialization in all branches of medicine, there is a tendency for more With pubof such work to go to the specialist. licity and propaganda concerning the need for and the importance of antenatal treatment, greater use is made of free treatment through the agencies of public hospitals. Despite all this, however, there is a great reduction in the number of patients absolutely and not only relatively; this can be explained only by the widespread use of birth control methods. In an advertising pamphlet sent to me recently through the post, in order to prove the efficiency of the agent used, the following statements were made, apparently with great satisfaction:

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ave æsher ork . . . it has been on the market for seven years and sales continue to climb steadily. The actual number of tubes sold in 12 months up to June, 1939, reached the huge total of 107,544, this is actually 295 tubes each of 16 applications for every day in the year. The bulk of the sales were in Victoria, New South Wales and Queensland, 70% of these were repeats and this most certainly indicates a very large circle of regular and satisfied clients.

Doubtless there are many other agents which are sold for the same purpose for which somewhat

similar figures could be put forth.

It is a not uncommon experience to be consulted by a young woman, married for two or three years, or even longer, and still childless, and fearful because for the first time since marriage the menstrual period has not arrived and it is a few days over the expected time. Full of anxiety, she has sought out a doctor to know whether this means that she is pregnant; at the same time she does not know how she can possibly be pregnant, as every means have been taken to prevent it. Such a person will have no reason from the viewpoint of health or finance why she should not have children. When it is explained to her that it is far too early for any definite statement to be made as to her condition, and she is advised to call again in five or six weeks' time, she will agree to do so. Very often she will not be seen again. Often it can be assumed that hers has been a case of pregnancy in spite of efforts to prevent it, and that means have been taken to terminate the pregnancy by means of another method of birth control.

One has only to look at the prevailing size of families to realize that in many cases restricting methods have been practised to a marked degree.

In Australia, where there are so many open spaces compared with the overcrowding which exists in other countries, it is inevitable that the population must be increased. In fact, it seems that the open spaces are viewed with envy by many nations. The increase in immigration to Australia has been most pronounced of late, and it is a very serious problem for the Australian nation to face if the increase of population here is to be from the influx of aliens instead of a natural increase of the Australian people by a normal healthy birth rate.

Various reasons are given why birth control must be practised, and I do not intend to dwell on them here. One may think that it is largely the economic factor; but richness and poverty are relative, and it is not amongst the poorest alone that birth control is most evident; one might almost say that the reverse is true.

Apart from factors involving the health of the mother, the economic factor should be the only one to count. It is here that the national service of child bearing could be well considered by the government of the day; a liberal child endowment policy could be adopted, whereby those who refuse to fulfil their obligations in the building up of a nation should be compelled to help those who take a much less selfish outlook.

And what should be the attitude of the profession towards birth control? I have a dim recollection

of stormy days in the past history of this Branch over a contraceptive that had been placed on the market. One of the members who had an interest in it was severely frowned upon by most of the others. Whether this was because of financial interest or because of advocacy of its use I cannot say; but it seems that the whole idea of it was generally abhorrent.

To my way of thinking, the responsibility of a medical practitioner with regard to patients seeking advice on methods of birth control should be to ascertain whether such a person was in a state of health in which it could be assumed that a pregnancy would not be prejudicial to her health. If such were found to be the case, no advice should be given as to how conception could be avoided. Only when there are definite indications that a pregnancy might imperil the woman's life should the advice be given. Of course I know that even if this were the attitude generally adopted it would not stop the handing on of such advice when it was given, and the public already know a fair amount—in fact, some of them might readily instruct doctors.

I feel very strongly that it is within the power of the profession to help materially in lessening the severity of this national calamity. Herein lie opportunities for the man in general practice, far more than for any specialist.

One phase of general practice that is from time to time before the public may be mentioned here, and that is the shortage of doctors. This of course applies to general practitioners; the shortage of specialists apparently is not known. The position that arises in the country is not one of shortage, but of supply and demand. In outlying districts which were formerly self-contained medically it is stated that no doctor can be persuaded to practise; but one has to examine the circumstances. Most of these districts are within thirty to forty miles of a provincial town with good roads, where there may be two or more doctors with motor cars. This is barely an hour away. While in former times most of the sick people in the outlying district were placed under the care of the resident practitioner, now often many of them leave the district and are treated in the provincial town. As originally little more than living expenses was earned, the position becomes such that the doctor cannot make ends meet and seeks a practice elsewhere. I can recall more than one district where the doctor, after buying a practice and working it for a period, has left without obtaining a purchaser; and even then no one could be induced to start, not because men were not looking for work, but because the prospects were This state of affairs is difficult to cope too poor. with. Whether, as in Tasmania, subsidized practices established by the Government are the solution I cannot say; but I do hold that medical services should be available for those requiring them.

Finally, in the more populous areas, where there are many practitioners, specialists and hospitals, there is an increased tendency by authorities of different sorts to assume control of the work of

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practitioners. Medical practitioners are registered by a board appointed by the government of the day as legally qualified practitioners. After registration they should have unrestricted liberty in their work, controlled only by laws of the land and not by any body. In this respect one sees attempts by the Charities Board to regulate practice. This is especially noted in the ramifications of the Workers' Compensation Act and those medically insured against accident.

A recent verdict in England in a court of law was that in charging fees to patients a medical man had a right to take into consideration the fact that money was provided under certain conditions to cover the medical fees. This is the reverse of the edict of the Charities Board with regard to workers' compensation cases; the instruction to hospitals is that the possible payments by insurance are not to be considered when the suitability of the injured worker for free treatment at a public hospital is being assessed. This, of course, if carried out, enables insured persons to be treated without any medical expenses and relieves the insurance companies of payment for these expenses. Another reason given why such patients should be allowed to go to the public hospitals was that the general practitioner had not the facilities for necessary treatment at his surgery, even to the possession of a

I have tried to point out a few ways in which the inducements for graduates to be general practitioners may be increased, with increased benefit both to the community at large and to the medical profession. I thank you for a patient hearing.

A BRIEF SURVEY OF SOME OF THE POLIOMYELITIS PATIENTS EXAMINED DURING THE VICTORIAN EPIDEMIC OF 1937-1938.

By STANLEY WILLIAMS, M.D., Melbourne.

I am indebted to the Victorian Joint Government and Municipal Committee for the Control of Poliomyelitis, and to Dr. Mostyn Powell, the senior consultant in Victoria to the committee, for the opportunity of examining these patients during the epidemic of 1937-1938.

As assistant government consultant I was available to be called in consultation by private practitioners, when a patient was suspected of suffering from poliomyelitis.

The chief reason for compiling the figures on which this paper is based is to obtain a follow-up of patients seen personally, for the variable factors that necessarily come into play when a statistical survey is made on clinical problems, although present, are probably at least constant. Much has been written by others on clinical, epidemiological and laboratory problems of poliomyelitis, and this discussion is only to emphasize a few points which appealed to me when considering the results.

First, the infectivity of the disease during this epidemic is well recognized, and in addition to the apparent spread of the disease by direct contact, in streets and suburbs of Melbourne, the incidence of more than one case in a family, previously uncommon, was found in three instances. residential homes in Coburg there were five children with poliomyelitis. Of the 133 patients with poliomyelitis whom I examined, 66 were in the preparalytic stage; this shows the rapidity with which parents called in their own doctor, who must have suspected poliomyelitis almost at the onset of symptoms. Of perhaps greater interest is the fact that only 15 of these patients did not become paralysed; that is to say, only 27% of cases in this series were what may be called abortive cases of poliomyelitis. These include children who were kept The correct proportion of diagnosable abortive cases is apparently much smaller than one would generally expect.

Fifty seven children were paralysed when first seen, and had a history, signs and symptoms that are now only too well known to many doctors in Australia.

With the permission of Dr. F. V. Scholes, of the Queen's Memorial Infectious Diseases Hospital, Fairfield, I was able to ascertain that 51 children of the 66 whose illness was diagnosed in the preparalytic stage suffered from paralysis, and this fact makes one wonder if there were many children infected by the virus of poliomyelitis who did not become paralysed.

The small number in my series who did not become paralysed (15) may be a much smaller proportion than actually occurred in the populace; but I venture to suggest that in those worrying times of the epidemic most children who were ill and who had no other diagnosable diseases were regarded as "suspect cases". I should certainly like to know of any practitioner who from his records could determine the number of patients with signs and symptoms indicative of abortive poliomyelitis.

The mortality of four patients (3%) is a little below that for the whole epidemic, but bears no real statistical difference.

During the period of the epidemic, while seeing these 133 patients with poliomyelitis, I examined 41 "suspect" patients who did not have poliomyelitis; from that I consider it reasonable to assume that the signs and symptoms of patients with poliomyelitis in this epidemic were comparatively definite and distinguishable from other illnesses, such as pneumonia, nasopharyngitis, and other intracranial infections.

The value of lumbar puncture I would not ignore, for in six instances this procedure was a help in diagnosis. In two of these cases there was an increase in the number of lymphocytes in the cerebro-spinal fluid, and the children were subsequently proved to be suffering from poliomyelitis, whilst four "suspect" patients who had not an

increased number of cells in their cerebro-spinal

fluid did not have poliomyelitis.

One frequently reads of various aids to diagnosis of this disease of poliomyelitis; but I would emphasize the value of frontal headache, drowsiness, and pains in the back of the neck and spine, as the most important symptoms, and the presence of neck and spine stiffness elicited by simple tests, and tremor of the limbs, particularly the hands, as the most important signs. If weakness can be detected in any muscle group, the diagnosis is then made simpler; but I confess that it is a trying procedure to both patient and doctor for the patient to be subjected to a complete examination of the muscle system in this early stage of the disease.

With the assistance of the medical officers supervising the after-care treatment of the paralysed patients I was allowed to follow-up 59 of the paralysed patients who had been seen in the early stages of the epidemic. This examination took place from twelve to eighteen months after the onset of paralysis. I found that 48 patients (81%) were still under treatment, most of them improving steadily, and 11 (19%) were cured.

Discussion.

There are many people well qualified to express opinions on the epidemiology of poliomyelitis, and much has been written in this regard; but we are still not in a position to dogmatize as to the number of children who are affected with the poliomyelitis virus during an epidemic. In this small series of 133 cases the small proportion of abortive cases in which paralysis did not develop may indicate that the virus infection during the epidemic is confined more to actual cases than is generally considered to be the case.

Summary.

- 1. A survey is given of 133 patients with poliomyelitis, examined during the epidemic in Victoria of 1937-1938.
- 2. The small proportion of preparalytic cases (27%) in which paralysis did not develop is discussed.
- 3. A "follow up" of 59 paralysed patients shows that 11% are now cured.

Acknowledgement.

I wish to acknowledge the assistance of Dr. E. V. Keogh in the preparation of this paper.

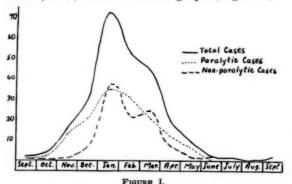
ACUTE ANTERIOR POLIOMYELITIS: A REVIEW OF 250 CASES IN SYDNEY DURING THE 1937-1938 EPIDEMIC.

By D. G. HAMILTON, M.B., B.S., M.R.A.C.P., Medical Registrar, Royal Alexandra Hospital for Children, Sydney.

During the summer of 1937-1938, 357 cases of acute anterior poliomyelitis occurred in the metropolitan area of Sydney. Of these children 250

were treated during the acute stage of their illness in the Royal Alexandra Hospital for Children, and form the basis of this report. These cases were completely unselected except that the age limit was fourteen years. Any child under this age referred to the hospital as suffering from poliomyelitis was admitted. The 107 patients not included in this report were adults or children treated at home or in other institutions during the acute stage of their

The report is essentially clinical. Epidemiological considerations are largely omitted, for the obvious reason that they necessitate a knowledge of all cases occurring within the temporal and geographic limits of the epidemic. All that need be said is that the epidemic commenced in September, 1937, was well established by December, rose very rapidly to a maximum in January, then fell away slightly less rapidly and gradually disappeared by September, 1938, as shown in the graph (Figure I).



Graph showing case incidence in each month.

Classification of Cases.

The cases may be separated into well-recognized groups as follows:

Non-para	lytic									104	cases	or	42.0%
Spinal pa	aralyt	ic								100	cases	or	40.0%
Bulbar p	aralyt	ic		 	 		 	 		15	cases	or	6.0%
Ataxic						•		 •		9	cases	or	3.6%
Encephal	itic			 	 		 	 		5	cases	or	2.0%

There remains a group of 17 cases in which the lesion was scattered to include the paralysis typical

of two or more of these groups.

Figure I shows the monthly incidence of paralytic and non-paralytic cases and of the two combined. It will be noticed that there is a slight lag in the incidence of non-paralytic cases early in the epidemic. This was probably due to the fact that practitioners were not then so fully alive to the presence of the epidemic, nor so well acquainted with the non-paralytic case.

The Stages of the Disease.

It is usual to divide the disease into prodromal,

preparalytic and paralytic stages.

The prodromal stage, characterized by little but a mild coryza, passed unnoticed by most parents, who dated the child's illness from the onset of the preparalytic stage. I have adopted the same prond

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cedure, and when I speak of the first day of illness, I mean the first day of the preparalytic stage, the stage at which the child is unquestionably ill.

The preparalytic stage, characterized by most of the general signs and symptoms and the cerebrospinal fluid changes detailed below, was calculated to have an average duration of four days. It then passed gradually into the stage of paralysis or of convalescence. The intensity of the signs and symptoms varied considerably from child to child. In a few cases, indeed, paralysis was the first symptom. The fact that in so many paralytic cases weakness had developed before the child was brought to hospital suggests that the preparalytic stage is less severe in those cases in which muscle weakness is destined to develop than in those in which the patient will remain non-paralytic. This suggestion was not borne out by the few patients who were admitted to hospital in the preparalytic stage and became paralysed in hospital. There seemed to be no accurate way of forecasting which of our preparalytic patients would become paralysed.

General Symptomatology.

The general symptoms were similar in all groups. The history given depends, of course, on the intelligence and observation of the parents, and the accuracy of a survey of symptoms is necessarily limited by these factors. The method used was to record the history volunteered by the parent, and then to make the common symptoms of poliomyelitis the subjects of direct questions.

The symptoms which were clearly stated as the mode of onset, with the percentage of cases in which each occurred as such, were the following:

Headache						17.0%
A A C SA COLO COLO				* *	 	
Pain in ne	ek	or	back		 	 13.0%
Fever					 	 12.0%
Vomiting					 	 9.0%
Coryza					 	 8.0%
Drowsiness					 	 7.0%
Paralysis					 * *	 7.0%
Peripheral	pai	n			 	 6.5%
Anorexia					 	 4.5%
Irritability					 	 4.5%
Abdominal	pa	in			 	 4.5%
Malaise					 	 3.5%
Languor					 	 3.0%
Giddiness					 	 1.5%
Tremor					 	 0.5%
Sweating					 	 0.5%
Convulsions					 	 0.5%

The symptoms recurring with any degree of frequency were the following:

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Pain in neck or back	66.0%
Headache	60.0%
Weakness	56.0%
Vomiting	44.0%
Constipation	30.0%
Peripheral pain	29.0%
Coryza	25.0%
Sore throat	18.0%
Cough	15.0%
Drowsiness	11.0%
Twitching or tremor	10-0%
Abdominal pain	9-0%
Difficulty in Micturition	n 6.5%

Pain in the back, headache and weakness were not only the most common symptoms, but when present made the greatest impression on the parent's mind and were usually volunteered first. Occasionally when the parent remarked on weakness in the child, none was found on examination or developed subsequently. It adds significance to these three striking symptoms of poliomyelitis to realize that they are quite rare in other diseases of childhood.

The gastro-intestinal symptoms next on the list are, however, common features of any pyrexial disease of childhood. Vomiting was usually preceded by anorexia and nausea. The constipation was seldom severe, nor were the cough and sore throat. Tremor, noticed particularly when the child attempted active movement, and twitching, noticed most often during sleep, though present in a limited number of cases, came to be regarded as very suggestive symptoms, for they were strikingly uncommon among the patients sent to hospital with a wrong diagnosis of poliomyelitis. Malaise and irritability were common, but were not made the subject of a routine inquiry.

Certain symptoms sometimes described as characteristic of the disease were found to be distinctly rare. Thus convulsions occurred in only two cases, diarrhea in four, and photophobia and

sweating in but a few.

Physical Signs.

The spine sign, present in 80% of cases, was of outstanding diagnostic importance. In a few cases observed from the onset of the illness the sign did not appear until the third or fourth day. However, it was often obvious in children brought on the first day of their illness, and usually disappeared by the end of the first week.

The whole spine was involved. The rigidity prevented flexion of the spine, but not rotation or extension. This applied particularly to the cervical portion of the spine, which in every case could be passively rotated without pain or resistance. In only three cases was the sign so

pronounced as to cause head retraction.

The sign could be elicited in a number of ways. First, with the child lying supine, a gentle attempt was made to flex the neck. The spinal rigidity and the child's discomfort were then usually obvious. The child was next raised to a sitting posture. When a normal person sits on a bed with his legs straight out in front, he flexes his spine a little to bring the centre of gravity of his body over his buttocks. If spinal rigidity was at all pronounced this caused the child pain, and with the spine held rigid, the hands were placed on the bed behind the body as props-the tripod sign of Amos. Next, the child was asked to look at some interesting object held near its umbilicus or to kiss its knees. The most uncooperative child could generally be persuaded to exhibit its spine sign by one or other of these methods. With very young children it was occasionally useful to place a hand under the neck and buttocks and gently lift the child off the bed.

Of course, with the uncooperative child, voluntary resistance to spinal flexion had to be patiently excluded.

In 12% of cases, I described the spine sign as "slight". These children could manage to kiss their knees, but with more pronounced pain and difficulty than is usual in other diseases such as acute tonsillitis. In 8% of cases there was no evidence of spinal rigidity at all. With the exception of several patients admitted to hospital as late as the eighth day of their illness and several others in whom marked paralysis of neck or spinal muscles obscured the sign, there remains this group of 35 children in which the spine sign was absent or so slight as to be of limited value in diagnosis. The group included children of all ages and children suffering from the non-paralytic, spinal paralytic, bulbar and ataxic types of poliomyelitis. But there was a noticeably higher proportion of ataxic and bulbar cases in this group than in the whole series. Indeed, in most of the ataxic cases the spine sign was mild or absent.

Table I shows the percentage incidence of a definite spine sign in each type of the disease, and bears out an impression formed during the epidemic that in bulbar paralytic and ataxic cases the spine sign tends to appear less frequently than in other cases

TABLE I.

Туре о	f Car	se.		Number of Cases.	Spine Sign (Percentage).
Non-paralytic				104	86
Spinal paralytic Bulbar paralytic			::	100 15	86 85 66
Ataxic Encephalitic			::	9	100

It is held by some authorities that the spine sign is essentially a feature of the preparalytic stage of the disease and disappears rapidly after the onset of paralysis. In our experience this is not so. Of all patients in the spinal paralytic group who were paralysed on admission to hospital, 76% still had a definite spine sign. In some of these cases the sign was still very pronounced, and in one amounted to frank head retraction. The truth of the matter seems to be that the spine sign is an earlier phenomenon of the disease than is paralysis; in some cases it is disappearing, but in the majority it is still present when paralysis develops, and persists for a variable time afterwards.

As a prognostic sign, spinal rigidity is of little significance. It is as pronounced in non-paralytic cases as in those in which paralysis develops. In bulbar and ataxic cases the paralysis tends not to be permanent whether the spine sign is present or not. In a considerable number of the spinal paralytic cases in which the spine sign was mild or absent severe paralysis was present.

Muscle tenderness was not a great feature of this epidemic. It was bad enough to need special treatment in no more than six cases. Slight tenderness was present in a large number of paralysed patients,

and in a few who never became paralysed. Many paralysed patients, however, showed no tenderness. Abdominal tenderness was present in a small number of cases and pronounced in two only.

A typical tremor was present in 25% of cases. It was a moderately coarse tremor of a whole limb. It was not present at rest, but was easily demonstrated when the child was asked to hold the arms at full length with the fingers extended and separated. It was present in the unaffected limbs in paralytic and in non-paralytic cases alike, but was not looked for in paralysed limbs. The presence of tremor seems to have little prognostic significance.

Alteration of the deep and superficial reflexes was rare except in paralysis of the part. However, an absent knee jerk or abdominal reflex was often a useful indication of slight paralysis of the muscles concerned, especially in very young children, in whom other tests of muscle power are difficult to interpret. Occasionally it was the earliest sign of an incipient paralysis, which became obvious within a day or two. Whenever there was muscle paralysis the tendon reflex depending on the paralysed muscle was lost, even though the paralysis was but slight.

Head lag was found to be a sign of little diagnostic value. In the cases in which it was pronounced, in which the head dropped back and the lower part of the face became distorted by the platysma, there was almost always an obvious paralysis of the cervical spinal region. A less pronounced but fairly definite lag occurred in fifteen patients who remained non-paralytic and in nine patients with paralysis of parts remote from the segmental distribution of the cervical part of the In these cases the lag probably spinal cord. indicates a slight paralysis of the neck muscles. Since demonstration of the sign involves stretching of these muscles and so the risk of increasing their weakness, and since the sign is of little diagnostic value, it should be banished from our clinical methods.

The mental state of the children was interesting. The majority of patients were content to lie quietly resting, and were bright and intelligent on being questioned. Seventeen patients (6.8%) showed drowsiness even on being examined. In five of these cases the stupor was so deep and persistent that a diagnosis of polioencephalitis was made. In eighteen cases (7.2%) there was considerable apprehension, and nine of these children showed the tremor seen in one-fourth of the total number of cases.

The tongue was in almost every case lightly coated, with the papillæ showing red through the fur. In very sick children and children with paralysis of the muscles of deglutition the coating was thicker. The fauces, tonsils and upper pharyngeal wall showed a generalized redness and were covered by a thin shiny exudate. It should be specially noted that there was no localized acute tonsillitis or rhinitis with a mucopurulent postnasal discharge. These two conditions were the

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most common wrongly diagnosed as poliomyelitis by the outside practitioners. I would go so far as to say that if a child has a localized acute tonsillitis or a purulent post-nasal discharge it is very unlikely to have poliomyelitis.

The skin in almost every case showed a rapid and obvious flush when stroked.

The temperature was usually of the order of 101° F. on the second, third and fourth days and then gradually fell to normal. The average duration of pyrexia was seven days. In a few cases it did not rise above 99° F. and in a few it rose as high as 104° F.

The Cerebro-Spinal Fluid.

On his admission to hospital, lumbar puncture was performed on almost every child. This was done as a diagnostic measure, because of interest in the results and because of an impression that the removal of seven or eight cubic centimetres of fluid decreased the child's discomfort and headache. Significant changes were found in the cell and total protein content of the cerebro-spinal fluid. The cells were stained by the mixing of nineteen parts of cerebro-spinal fluid and one part of toluidine blue in a leucocyte pipette and were counted in a hæmo-cytometer chamber. The total protein content was estimated by precipitation with trichloracetic acid and comparison with standard opacity tubes.

Table II and the graph (Figure II) give tabular and graphic summaries of the results obtained.

TABLE II.

Day of Disease.	Number of Cases.	Average Number of Leucocytes per Cubic Milli- metre of Cerebro- spinal Fluid.	Average Total Protein Content in Milligrammes per 100 Cubic Centi- metres of Cerebro- spinal Fluid.
1 2 3	7 36 43	82 222 146	63 96 77 61 86
5 6 7	36 43 37 23 12	91 87 102 27 31 28 28 24 ——————————————————————————————	91 75
9 10 11 12 13	16 1 1	28 28 28 24	91 109 60 80 —
12 13 14 15	0 7 2	13 7	74 58

In normal cerebro-spinal fluid obtained by lumbar puncture the leucocyte count varies from 0 to 10 cells per cubic millimetre and the total protein content from 20 to 40 milligrammes per 100 cubic centimetres of fluid.

In acute poliomyelitis there is obviously a rapid rise in leucocytes and protein content, with the number of cells falling back to normal more rapidly than the protein content. During the earlier days of the illness more than half the cells may be neutrophile leucocytes, but later the majority are lymphocytes (see the graph, Figure III).

These findings indicate that one can expect significant changes in the cerebro-spinal fluid from the first to the fourteenth day of the illness. In many cases the total protein content is raised for a still longer period.

It is important to ask whether a normal cerebrospinal fluid denies a clinical diagnosis of acute poliomyelitis. In our experience it does not.

In the first place, lumbar puncture may be performed before changes have taken place in the fluid. Poliomyelitis was diagnosed in 43 cases seen on the first or second day of illness. In five of these, or 11%, no changes were observed in the cerebro-spinal fluid, but characteristic changes were found when lumbar puncture was repeated two or three days later.

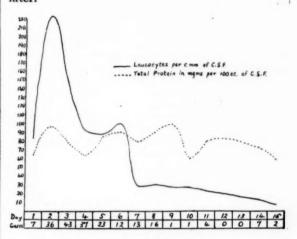
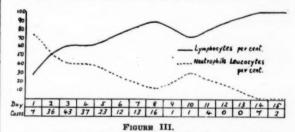


FIGURE II.

Graph showing changes in cerebro-spinal fluid on each day of the disease.

In the second place, it cannot be denied that in rare cases the fluid may remain normal throughout the disease. In ataxic cases the changes are usually slight. Apart from these, there were five cases (three paralytic and two non-paralytic) in which a single lumbar puncture, performed between the



Graph showing differential cell count of cerebro-spinal fluid on each day of the disease.

third and fifth days of the illness, revealed quite normal cerebro-spinal fluid. In six other cases (one paralytic and five non-paralytic) the fluid changes were so slight as to be of no diagnostic significance. Therefore, with the exclusion of cases of the ataxic group, a single lumbar puncture performed at the height of the illness was of no value as a diagnostic measure in 4.5% of cases.

Of course, significant changes may have been present at an earlier or later stage in all these cases. They are used to show, not that poliomyelitis can exist without changes in the cerebro-spinal fluid throughout the whole course of the disease, but that these changes may be missed, and that lumbar puncture therefore is not an absolutely reliable diagnostic measure. However, it remains an essential and harmless investigation in the case in which clinical methods leave any doubt as to diagnosis. Even when no such doubt exists, I should still recommend lumbar puncture, for I feel that it is a procedure of definite therapeutic value.

The Paralytic Cases. The Spinal Paralytic Group.

The spinal paralytic group included 100 children. The paralysis varied in severity from mild lesions, from which the patients recovered in a few weeks, to lesions that will leave permanent crippling.

In Table III is given a summary of the distribution of this paralysis. In the arms, the large proximal muscles were most often and most severely affected, but in two cases the weakness was confined to the small muscles of the hand. In the legs the greatest incidence of paralysis was in the thigh muscles and dorsiflexors of the foot.

| Patients | Patients | With other Paralysis. | Patients | With other Paralysis. | Patients | With other Paralysis. | Patients | Pat

Of the patients showing paralysis of the respiratory muscles, seven needed treatment in the respirator. In most of them all the respiratory muscles were involved, but in one severe case the diaphragm and the muscles of both arms and neck were the only ones affected.

The patients in this spinal paralytic group showed the general signs and symptoms and the changes in the cerebro-spinal fluid already discussed.

The Bulbar Paralytic Group.

The bulbar paralytic group includes the patients with damage to the motor nuclei of the pons, midbrain and medulla oblongata. Fifteen patients showed lesions limited to these regions, and sixteen had some bulbar paralysis combined with spinal paralysis or ataxia. Table IV summarizes the lesions in this group. It will be seen that the palatal muscles were the ones most often affected. Involvement of oculomotor nuclei usually produced a paralytic squint. In two cases ptosis of the eyelids resulted, and in one case this was the only paralysis present. Paralysis of the pharyngeal muscles was usually accompanied by paralysis of muscles of respiration.

TABLE IV.

	1	Site			Patients Without other Paralysis.	Patients With other Paralysis.	Total.
Palate					8	12	20
Face					4	3	7
Eye muscl	8			* *	1 1	6	7
Pharynx					0	5	. 5
Fongue Pterygoids			. *	* *	0	1	1
r eer a Roiers		*			0		1

The spine sign and changes in the cerebro-spinal fluid in this group tended to be less pronounced than in the spinal paralytic and non-paralytic groups.

The risk of death in the acute stage of the illness is greater in cases of this group than in any other, because of the risk of involvement of the bulbar vital centres with sudden failure of respiration or circulation. However, the acute stage once past, the prospect of complete recovery from paralysis is very bright. As far as I have been able to ascertain, only two children of our bulbar paralytic group are now left with residual paralysis, a slight degree of facial palsy in both cases.

The Ataxic Group.

The ataxic group consists of nine cases, in which motor ataxia was present without muscle weakness. The site of action of the virus appears to be in the cerebellum, cerebellar connexions or in Clarke's column of the upper portion of the spinal cord. It was characteristic of these cases that the general symptoms were mild, the spine sign was never pronounced and was absent in half the cases, and the changes in the cerebro-spinal fluid were slight. Recovery has been complete in all cases.

Several characteristic case histories are here summarized:

CASE 5400.—A girl, aged five years, had been ill for four days with drowsiness and pain in the back. On the day of examination she was staggering. The spine sign was absent, the knee jerks were present, the gait was ataxic, nystagmus was present. Examination of the cerebro-spinal fluid revealed 55 leucocytes per cubic millimetre and 50 milligrammes of protein per 100 cubic centimetres. The child recovered in three weeks.

Case 7027.—A girl, aged five years, had been ill for one week with pain in the back, abdomen and leg. Vomiting had been present at the onset. On examination the spine sign was present, the knee jerks were present, there was no muscle weakness and the gait was ataxic. Rombergism and nystagmus were present, and coordination was impaired in the legs. Examination of the cerebro-spinal fluid revealed one leucocyte per cubic millimetre and 60 milligrammes of protein per 100 cubic centimetres. The child recovered in three months.

In addition, two patients showed paralysis of a bulbar type as well as ataxia.

Case 6690.—A girl, aged five years, had been ill for two days with fever, drowsiness and staggering gait. On examination the spine sign was absent, the knee jerks were absent, pronounced ataxia and Rombergism were present, coordination was poor, and there was paralysis of the palate and the left side of the face. Examination of the cerebro-spinal fluid revealed 32 leucocytes per cubic millimetre and 80 milligrammes of protein per 100 cubic centimetres. The child recovered from all the lesions in one month.

Case 6284.—A boy, aged four years, had been ill for one day, with difficulty in walking. On examination the spine sign was present to a slight extent. There was no muscle weakness; the gait was ataxic and Rombergism was present. Coordination was poor, but no nystagmus was present. Examination of the cerebro-spinal fluid revealed that it contained no cells, but 60 milligrammes of protein per 100 cubic centimetres. After eleven days in hospital, during which time the child became apyrexial and appeared to be recovering, palatal and pharyngeal paralysis developed. These disappeared in two weeks, but the ataxia persisted for almost three months.

The Encephalitic Group.

The outstanding feature of the five cases in the encephalitic group was pronounced and persistent drowsiness. All patients showed the usual spine sign and changes in the cerebro-spinal fluid. In addition to these five children, two suffered from polioencephalitis in association with paralysis of other parts.

Of the patients with uncomplicated policencephalitis, four suffered from spasticity of the legs with increased tendon reflexes and varying degrees of patellar and ankle clonus. In all but one case, however, the plantar reflex remained flexor in type. In this particular case there was definite weakness of both legs of an upper motor neurone type. This lad's gait remained spastic for several months, but is now normal, though the knee jerks are still much increased, the plantar reflex is indeterminate and slight ankle clonus is still present. In the remaining cases the gait was slightly spastic for but a few weeks.

In all cases complete mental recovery has occurred.

Cases of Special Interest.

Certain unusual cases merit special mention.

Recurrences.

Two children who had had poliomyelitis in a previous epidemic contracted the disease again.

Case 5959.—A boy, aged eleven years, had had poliomyelitis with paralysis of the right arm in 1930, and had since been used as a donor of blood for the preparation of convalescent serum. He was admitted to hospital during this epidemic with a history of pain in the back and nausea; the spine sign was present, and the cerebro-spinal fluid contained 52 leucocytes per cubic millimetre and 80 milligrammes of protein per 100 cubic centimetres. The child recovered without the occurrence of paralysis.

Case 6996.—A boy, aged eight years, had poliomyelitis with paralysis of both legs in 1934. He was admitted to hospital in this epidemic with a history of vomiting and neck stiffness. He had obvious spinal rigidity and head retraction, and the cerebro-spinal fluid contained 130 leucocytes per cubic millimetre and 80 milligrammes of protein per 100 cubic centimetres. The boy recovered without the occurrence of paralysis.

Relapses.

In two cases new paralytic lesions developed after the patients had been in hospital for some time and after recovery was apparently taking place.

Case C.143.—A girl, aged eleven years, was admitted to hospital on the fifth day of her illness. The spine sign was then present, and she had mild paralysis and tender-

ness of the hamstring muscles of the left leg. Lumbar puncture was not performed. Next day she was apyrexial. After a week all muscle tenderness had gone. The leg was kept at rest on a single back splint. Hot baths and muscle reeducation were commenced on the seventh day. On the fourteenth day, without pyrexia, pain and tenderness recurred in the muscles of the left leg and appeared for the first time in the left shoulder girdle muscles. Next day weakness of these muscles and increased weakness of the leg were present. Baths and exercises were suspended and recommenced four days later. The child steadily improved and was discharged from hospital without weakness a month later.

CASE 6284.—Case 6284 is reported above.

Athetosis.

A patient showing athetoid movements was one of the most interesting of the epidemic. Unfortunately we were unable to verify the diagnosis by laboratory tests and it remains doubtful.

Case 7006.—A boy, aged two and a half years, was admitted to hospital during the height of the epidemic, with a history of coryza and fever two weeks previously and loss of power in the limbs for one week. On examination, the child was dull mentally. There were constant, irregular, involuntary, coarse worm-like movements of the arms, legs and neck. The child could not articulate clearly. The spine sign was absent, as would be expected at this stage of the illness, the deep and superficial reflexes were present, and no muscle weakness could be detected. The tongue was lightly furred and the throat reddened. Many discontinuous râles could be heard throughout the chest. The cardio-vascular system was free of abnormal signs. The temperature was 101° F. and became normal in three days. This elevation may have been due to the accompanying bronchitis.

Lumbar puncture revealed two leucocytes per cubic millimetre of cerebro-spinal fluid and 20 milligrammes of protein per 100 cubic centimetres. The blood sedimentation rate was slightly raised.

The stupor, dysarthria and athetosis persisted unchanged for two weeks. The child's condition then gradually improved, and three months later he was intelligent, free from abnormal movements, talking and walking well. There was no muscle weakness at any stage of the illness.

The child has since remained well.

Though there is some doubt as to the correctness of our diagnosis, we regard this child as suffering from polioencephalitis involving chiefly the region of the thalamus, cerebellum or cortico-cerebellar connexions. It is unfortunate that he was not referred earlier in his illness when the findings on lumbar puncture might have been more conclusive.

Treatment.

Every child was kept at rest for a period of three weeks in a horizontal bed with the mattress supported on fracture boards to prevent sagging. Nonparalytic patients were allowed to sit up in bed when free of fever, spinal rigidity and all symptoms, and at the end of three weeks to walk about for a day or two before being sent home. They all subsequently returned to a follow-up clinic on several occasions for observation.

In almost every case, paralytic or not, lumbar puncture was performed on the day of admission to hospital. This was done to confirm the diagnosis, because of interest in the results, and as the epidemic progressed, because of an impression that

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the removal of about eight cubic centimetres of cerebro-spinal fluid actually increased the comfort of the patient. In almost all cases local anæsthetic only was used.

Convalescent poliomyelitis serum was given to only five children.

Hypertonic glucose solution (20% glucose in normal saline solution) was given intravenously to five patients in an effort to reduce ædema of the brain and spinal cord. To illustrate the striking results obtained in a certain type of case, a summary of each history is given.

CASE 7405.-A boy, aged six years, was suffering from polioencephalitis. Marked drowsiness and slight facial weakness were present on his admission to hospital. Lumbar puncture was performed. After two days he was still very drowsy and extremely irritable on being roused at all. There was a constant expression of anguish on his face, and he frequently gave a short, high-pitched cry. He was then given five ounces of glucose solution intravenously at 7 p.m. Next morning he was much less drowsy and less irritable, was talking sensibly and not crying out at all. By 5 p.m. he was again drowsy and irritable, and a further five ounces of the same solution were given. Next morning he was happy and mentally He remained so, almost normal. and completely.

Case 7821.—A boy, aged eight years, was suffering from polioencephalitis. On admission to hospital he was so drowsy that it was difficult to get an answer to any question at all. Lumbar puncture was performed. By the third day there was little improvement and lumbar puncture was again performed. Next day there was still no improvement, and nine ounces of glucose solution were given intravenously. The following day he was quite bright and intelligent and progressed steadily to a complete recovery.

Case 8457.—A boy, aged seven years, was suffering from polioencephalitis. He was very drowsy on admission to hospital and the knee jerks were exaggerated. After fourteen days the drowsiness had diminished only a little, and spasticity of the legs had developed. There was also a flaccid paralysis of the anterior tibial muscle of one leg. He was given eight ounces of glucose solution intravenously. Next day the drowsiness was less pronounced, but the spasticity was unchanged. The child is still having treatment in the out-patient department for the flaccid paralysis. His mental state is normal and no spasticity is present.

Case 7414.—A girl, aged ten years, was suffering from spinal paralytic poliomyelitis. She had severe generalized paralysis. She was given ten ounces of glucose solution intravenously, chiefly because she was refusing food and drink. There was no noticeable effect on the paralysis.

Case 7302.—A boy, aged nine years, was suffering from spinal and bulbar paralytic poliomyelitis. He had severe paralysis of the palatal, pharyngeal, neck and respiratory muscles. He was given seven ounces of glucose solution intravenously and was treated in the respirator. During the next two days the paralysis spread to involve one arm and one leg.

If paralysis developed, splinting and muscle reeducation were used. The aim of the splints was to immobilize the part in a position of relaxation of the paralysed muscles. The purpose was to prevent stretching of weakened muscles and contractions of their antagonists. For paralysis of the leg, plaster or aluminium back splints were used. If the spinal or gluteal muscles, or a considerable mass of the thigh muscles were involved, a frame

was used to immobilize the trunk and both lower limbs.

A single paralysed arm, if mildly affected, was tied with a loose bandage to the top or side of the bed in such a position as to relax the affected muscles. If more severely involved, it was bandaged to some form of splint.

Muscle reeducation and hydrotherapy were commenced in most paralytic cases early in the second week. By this time the temperature was usually normal, and muscle tenderness was not regarded as a rigid contraindication to the commencement of hydrotherapy. In several cases hot baths were commenced while the muscles were very tender, but the relief obtained was not striking.

Once daily, each paralysed child was placed in a fresh-water bath at a temperature of 90° F., and encouraged to perform active movements of all muscles in turn. Completely paralysed muscles were put through a limited range of passive movements. Care was always taken not to tire or overstretch paralysed muscles, for this inevitably increased weakness.

The treatment given may be summarized as follows. During the acute stage the child was treated by the following measures: (i) rest in bed, (ii) a single lumbar puncture, (iii) convalescent serum (five cases), (iv) hypertonic glucose solution by the intravenous route (five cases). If paralysis developed, the treatment was as follows: (i) splinting in a position of relaxation of paralysed muscles, (ii) hydrotherapy, (iii) muscle reeducation by active movements and passive movements when necessary.

Results.

Incidence of Paralysis.

A total of 146 patients showed paralytic lesions of some type. Of these 117 were paralysed on admission to hospital and suffered no extension, 10 were paralysed on admission to hospital but the paralysis subsequently became more severe or more extensive, and 19 were not paralysed on admission to hospital but subsequently became paralysed.

A total of 104 patients remained non-paralytic throughout their whole illness.

Thus of 123 patients (19 + 104) who showed no paralysis on admission to hospital, only 19 (or $15 \cdot 3\%$) subsequently became paralysed.

Results Obtained by September, 1939.

A follow-up conducted throughout the twelve months since the epidemic came to an end reveals the position set out in Table V. The patients described as cured were all observed for several months after evidence of paralysis disappeared, and the cure can be regarded as permanent and complete.

Of the children still attending as out-patients, the majority are now but slightly crippled and can be expected to recover completely or be left with a comparatively slight handicap.

Of those who are still in-patients, the majority will be left with some permanent crippling. In er

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TABLE V

Patients.				Non- Paralytic.	Spinal Paralytic.	Bulbar Paralytic.	Ataxic.	Encephalitic.	Mixed Paralytic.	Total	
Discharged cured Out-patients In-patients Dead	::			 98 	47 15 27 11	9 2 1 3	9 =	1 = =	12 ' 2 1 1	179 20 28 2 21	
Total				 104	100	15	9	5	17	250	

two cases there is extensive generalized paralysis, and the patients are completely and hopelessly bedridden. The upper extremities are involved in five cases, the paralysis varying from severe paralysis of both arms to paralysis of one hand only. In nineteen cases one or both legs are involved, in most cases severely, but in a few cases only slightly.

The mortality rate of only two cases in 250 is pleasantly low. Both children died during the acute stage of their illness. One had extensive bulbar paralysis and collapsed suddenly and died within a few hours of admission to hospital. The other had extensive bulbar and spinal paralysis, with respiratory difficulty. She was placed in the respirator, but failed to synchronize her breathing and died in a few hours.

The patients listed as transferred returned to private practitioners or transferred to other clinics for treatment, and details of their progress are not known. It is known, however, that one of them, a child with severe generalized spinal paralysis, has since died. In twelve of the other cases I should have confidently promised complete recovery; but in the remaining eight the outlook was less hopeful.

The results obtained with the seven patients treated in the respirator were disappointing. Of these, one died, and the remainder recovered sufficiently to spend all or most of their time out of the respirator. But only one child has completely recovered. Of the others, one has died, one is permanently bed-ridden, and three are severely and permanently crippled.

Estimate of Value of Treatment.

Once paralysis has developed, there is no question of the necessity of some adequate form of splinting and of the value of hydrotherapy and careful, persistent muscle reeducation. The reward for patience and care is sometimes surprising. I have no intention of adding to all that has been said recently about the details of these procedures.

What is of greater interest and importance is the quest for some form of therapy which, given in the preparalytic stage, prevents the onset of paralysis.

Convalescent poliomyelitis serum was given to only five children. Though this small series is of little value in an estimate of the value of serum therapy, the impression gained was that it was of no value whatever either to shorten the period of pyrexia, to prevent the development of paralysis or to lessen paralysis already established.

Hypertonic glucose solution was given by the intravenous route to five patients in an effort to reduce ædema of the brain and spinal cord. The impression gained, again from a very small series, was that this therapy was of great value to reduce the drowsiness and discomfort of polioencephalitis, but of no value to prevent the paralysis of poliomyelitis. Case 7405 is specially significant. The fact that the child's condition improved after the first injection and that within twenty-four hours he was again drowsy and irritable suggests that the improvement was a consequence of the injection and not the normal course of his disease. Permanent relief followed a second injection. In Case 7821 little improvement followed repeated lumbar puncture, but the response to cerebral dehydration was striking.

I feel that this line of therapy is of great value and should be used in all cases of polioencephalitis.

Apart from the few children given the above treatment, all that was done for our preparalytic patients was rest in bed, lumbar puncture, aperients if necessary and a light diet. I have attempted to estimate whether these simple measures were of any real value.

In the children who were paralysed on admission to hospital, that is, who had not received treatment during the preparalytic stage, this stage was calculated to have an average duration of 3-9 days. The children, therefore, who were admitted to hospital unparalysed during the first four days of their illness could be fairly regarded as being in the preparalytic stage, and as still having an average likelihood of contracting paralysis. They form the group of patients who received the above treatment during the appropriate stage of their illness. They numbered 92, and of them only 12, that is, 13%, did become paralysed.

Now the total number of patients regarded as suffering from poliomyelitis in the metropolitan area and sent to this hospital was 250. Of these 146 showed paralysis of some sort, the majority on admission to hospital and a few subsequently. This represents an incidence of paralysis of 58-4% and offers a striking contrast to the figure of 13% given above.

It would seem, therefore, that the simple treatment given was very effective.

In contradiction of these figures, it may be argued that very many non-paralytic cases were either not seen or not diagnosed by outside practitioners, and,

therefore, that the figure of 58.4% is far too high to represent the true incidence of paralysis among all cases of poliomyelitis that occurred. Let this be granted and let it be assumed that our figure of 13% represents this incidence more truly. Let us also make the justifiable assumption that all paralytic cases were diagnosed. This being so, our 146 paralysed cases would represent 13% of the total cases of poliomyelitis occurring in the area served by this hospital. This total number would be 1,123, and this would mean that 873 cases of clinical non-paralytic poliomyelitis occurred in the metropolis and remained unrecognized. This does not refer to the subclinical case, of course, for our figures are based on clinical cases. And when one knows how ill these children are, and knows, moreover, how readily children were sent to hospital with a wrong diagnosis of poliomyelitis, it is not possible to believe that so many cases could be missed.

The conviction remains, therefore, that rest and lumbar puncture and good nursing are of very great value in the preparalytic stage. If this paper can help practitioners to make the diagnosis before paralysis occurs and convince them of the value of this early treatment, it has served its purpose.

Differential Diagnosis.

Many diseases of childhood cause fever, malaise and vomiting, and not infrequently these symptoms are accompanied by some degree of neck stiffness. It is of value to record the diseases wrongly diagnosed as poliomyelitis during the 1937-1938 epidemic for this reason. The number of cases of each is as follows: acute tonsillitis, 77; acute pharyngitis, 32; pneumonia, 14; acute rheumatism, 12; gastro-enteritis, 11; tuberculous meningitis, 4; influenzal meningitis, 3; influenza, 4; acute pyelitis, 3; acute otitis media, 3; acute appendicitis, 2; septicæmia, 2; infantile convulsions, 2; diphtheria, 1; heat stroke, 1; acute vulvo-vaginitis, 1; acute bronchitis, 1; tetanus, 1; encephalitis, 1; dietetic indiscretion, 1.

Another large group of diseases cause pain or apparent weakness of a limb or other part. The cases of this group seen were: acute osteomyelitis, 5; scurvy, 2; hysteria, 2; iliac adenitis, 2; inguinal adenitis, 1; infected wound of the leg, 1; post-diphtheritic paralysis, 1; spastic diplegia, 1; orthopædic deformities, 2; cerebral embolism from bacterial endocarditis, 1.

Other conditions, of course, could be added to each list to make the differential diagnosis complete. However, the above lists of the errors made last year should suffice to emphasize that even during an epidemic poliomyelitis is not the only cause of fever or limp. These other things are generally easy enough to find if the search is diligent. But let me emphasize again that where real doubt, exists, lumbar puncture is a safe and simple procedure. Almost always it establishes the diagnosis and thus brings within reach of the patient the benefit of early treatment.

Summary.

Two hundred and fifty cases of acute anterior poliomyelitis occurring in Sydney in the epidemic of 1937-1938 are discussed with respect to symptoms, signs, changes in cerebro-spinal fluid, treatment and diagnosis.

Acknowledgements.

I express my gratitude to the honorary medical staff of the Royal Alexandra Hospital for Children for permission to discuss these cases, and to the medical superintendent, Dr. S. W. G. Ratcliff, the members of the pathology and massage staffs, and Sister Munro and her nurses for the organization and cooperation that made the care of these children an extremely pleasant though strenuous task

AN EXAMINATION OF THE OLFACTORY BULBS IN FATAL CASES OF POLIOMYELITIS DURING THE VICTORIAN EPIDEMIC OF 1937-1938.

By E. Graeme Robertson, M.D., B.S. (Melbourne), M.R.C.P., F.R.A.C.P.

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It is current belief that, in human infections, the virus of poliomyelitis gains access to the nervous system along olfactory pathways. Ultimately this belief is based upon experimental work in the rhesus monkey, which can be regularly infected by intranasal instillation of virus, but by no other method which does not involve direct inoculation of some nervous tissue. In 1937 and 1938 a number of observers (Fischer and Stillerman, (1) Stillerman and Fischer, (2) Anderson and Dixon, (3) Culley⁽⁴⁾) reported the development, following tonsillectomy, of a type of poliomyelitis which was "bulbar" in a high proportion of cases. In 1938 F. V. Scholes, in Melbourne, reported such a case and suggested the raw tonsillar fossa as a portal of entry. Recently, however, Sabin (5) has shown that it is possible to infect the rhesus monkey (Macaca mulatta) by the injection into the tonsillopharyngeal region of 100 to 1.000 minimal cerebral infective doses. There was a high incidence of the bulbar type of the disease among these monkeys. Sabin and Olitsky⁽⁶⁾ have demonstrated well-marked lesions in the olfactory bulbs when the invasion occurred by way of the olfactory nerves; but there was an absence of these changes when the invasion of the central nervous system was by other pathways. They report that L. W. Smith⁽⁷⁾ examined, from 40 human cases, 56 olfactory bulbs which showed surprisingly little change.

In less than a fourth of them do the characteristic cellular infiltrative changes, as seen in the ganglia and nerve roots, appear.

A discussion of the finding of virus in human faces is hardly pertinent to this paper.

Burnet, Jackson and Robertson (8) have found cynomolgus monkeys (Macaca irus) to be more

susceptible to infection with human virus from the Australian epidemic of 1937 and 1938 than are rhesus monkeys (Macaca mulatta), and believe that the behaviour of virus "in the most susceptible unnatural host would present the closest analogies to its behaviour in the natural host". In cynomolgus monkeys they were able to produce infection by intranasal, intraocular, pharyngeal and intradermal inoculation. They remark:

. . . the fact that cynomolgus monkeys can also be infected by pharyngeal swabbing may or may not be relevant to human problems, but it at once destroys the basis for the belief that the great majority of human infections are of olfactory entry and leaves the problem entirely open.

Histological studies are reported which show some correlation of the pathological lesion with the point of inoculation of virus. In rhesus monkeys inoculation into the posterior chamber of the eye was found to produce ptosis of the upper eyelids and paralysis of the upward movement of the eyeballs. Histologically the first lesion seen in the nervous system was in the oculomotor nuclei, followed later by involvement of motor neurones elsewhere (Burnet, Jackson and Robertson⁽⁹⁾).

Scope of the Investigation.

Twenty olfactory bulbs, nine pairs and two from eleven patients, single specimens, were embedded in celloidin and serially sectioned. They were stained for Nissl granules and hæmatoxylin and eosin. Unfortunately a number of difficulties prevented a comprehensive investigation. Permission had to be sought for autopsy, and because of the calamitous precipitancy of death this was refused in most instances. This fact also resulted in delay in obtaining specimens, and as no cooling facilities were available the olfactory bulbs obtained in the early stages of the epidemic were unsatisfactory for examination. Later, members of the resident medical staff were so good as to inject formol in saline solution through the cribriform plates immediately after death.

Clinical Features of the Victorian Epidemic.

In the Victorian epidemic tonsillitis was a common symptom of the onset, occurring in patients An unusually large proportion of of all ages. patients showed pharyngeal or respiratory palsy, or both combined. All the deaths occurred among patients with these symptoms. pneumonic consolidation was a constant feature. Dr. F. V. Scholes, the Superintendent of the Queen's Memorial Infectious Diseases Hospital, Fairfield. emphasizes the necessity for prolonging respiration by mechanical means and for skilled nursing. Good nursing by a staff well trained in nasal feeding, as at a fever hospital, lowers the incidence of inhalation pneumonia.

In most of the cases examined the signs of bulbar paralysis were of early onset. The clinical histories of nine of the eleven patients whose olfactory bulbs were examined were characterized by the early development of pharyngeal and respiratory paralysis. A more detailed presentation of two histories may be of value.

Reports of Cases.

Case I.—K.C.D., a male, aged ten years and eleven months, had had rubella eight weeks previously On September 13, 1937, he felt ill and had nausea, giddiness and general weakness. On the next day he was better; but on the next he complained of sore throat, frontal headache and stiffness of the neck. Tonsillitis was diagnosed. On September 16, 1937, he was worse and diphtheria was suspected.

On his admission to hospital on September 16, 1937, his temperature was 100.2° F. He spoke with a nasal voice. There was a left-sided facial palsy, his neck was weak, the deltoids were weak and the grip of each hand was feeble. The diaphragm was paralysed and the intercostal muscles were weak. He was immediately placed in a respirator. He died on September 30, 1937, having been unable to swallow and unable to breathe without the respirator for some days previously.

Case II.—A.C.B. was a male, aged seventeen and half years. Two weeks before his admission to hospital on October 20, 1937, he had a cold and coughed a great deal. On November 18, 1937, he complained of pain in the neck and slight headache. He vomited several times and hiccup was troublesome. On his admission to hospital his temperature was $102\cdot2^{\circ}$ F.; an obvious right facial paralysis and pharyngeal palsy were present. His chest was moving well. There was "probable weakness of the right arm". Much mucus and pus were drained from his nose and mouth. He died on the day of admission to hospital.

Histology of the Twenty Olfactory Buibs.

No macroscopic abnormality was observed in the twenty olfactory bulbs.

Microscopic examination revealed a definite abnormality in only one case (Case I). Here there was an intense accumulation of lymphocytes around one vessel running vertically towards the surface and around its large tributaries. Near this vessel were a few small focal accumulations of lymphocytes. Damage to nerve cells was not evident and certainly did not involve any of the groups of larger mitral cells.

In no other olfactory bulb was there any recognizable pathological abnormality. It is of interest to note that two patients showed respiratory paralysis alone, without pharyngeal involvement. Two olfactory bulbs were examined from one of them, a patient who died fourteen days after admission to hospital. Unfortunately only one bulb was obtained from the second patient. In none were any inflammatory changes noted.

Comment.

That inflammatory changes were present in only one olfactory bulb in this series is very striking. In this case the definite inflammatory reaction may be an indication of the route of access of the infection to the central nervous system; but it cannot be stated that the lesion is with certainty due to the virus of poliomyelitis. Its presence in one "bulbar" case, differing in no other respect from eight others, suggests the possibility that it may be adventitious, perhaps due to some other

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inflammatory agent. The absence of changes in the remaining olfactory bulbs may mean that the virus had entered the nervous system by another route or that it had passed through these afferent cells without producing demonstrable lesions. In favour of the first hypothesis is the early development of pharyngeal palsy, before the onset of paralysis of skeletal muscle. Interpreted in the light of recent experimental work, this observation suggests that the virus is delivered directly to the medulla by the glossopharyngeal nerves. Further evidence of an extraolfactory pathway is Sabin's observation that the olfactory bulbs in rhesus monkeys show after inflammatory change only intranasal. inoculation. This fact is evidence against the second hypothesis, that the virus may pass through the olfactory bulbs without producing inflammatory changes; but it is to be remembered that it applies to a relatively insusceptible laboratory animal. There is indirect evidence to suggest that, even if the olfactory pathway is followed, the olfactory bulbs may escape damage; for example, after intraocular inoculation in rhesus monkeys very little inflammatory change is found in the pathway along which the virus presumably travels.(9)

The clinical evidence presented does not aid in the solution of this problem. The cases of primary bulbar paralysis may well have resulted from direct entry of the virus from the pharyngeal region, which would account for the absence of changes in the olfactory bulbs. The relation of the point of entry of the virus to the occurrence of respiratory paralysis is only part of the larger problem of the initiation of poliomyelitis infections in general, since as a rule the respiratory weakness coincides with, or follows, involvement of other muscles of the trunk and limbs.

Summary.

- 1. A study of the olfactory bulbs from eleven fatal cases of poliomyelitis affords no definite evidence for or against invasion of the nervous system by the olfactory pathway.
- 2. In one olfactory bulb from a series of nine patients with early pharyngeal or respiratory palsy, or both, inflammatory changes were noted.
- 3. In three olfactory bulbs from two patients with paralysis of the skeletal muscles and without pharyngeal paralysis no inflammatory changes were
- 4. The accumulated evidence suggests that the virus may reach the central nervous system by pathways other than the olfactory, and that when bulbar palsy is an early manifestation the afferent pathway is probably along the glossopharyngeal nerves from the pharyngeal and tonsillar regions.

Acknowledgement.

It gives me pleasure to record my thanks to Dr. Helen Kelsey, pathologist to the Queen's Memorial Infectious Diseases Hospital, Fairfield, who obtained the specimens examined.

References.

References.

(1) A. E. Fischer and M. Stillerman: "Acute Anterior Poliomyelitis in New York in 1935: Review of 686 Cases", American Journal of Diseases of Children, Volume LIV, 1937, page 984.

(2) M. Stillerman and A. E. Fischer: "Acute Bulbar Poliomyelitis following Recent Tonsillectomy and Adenoidectomy" ibidem, Volume LVI, 1938, page 778.

(3) D. M. Anderson and J. H. Dixon: "Acute Bulbar Paralysis: Report of Two Cases", The British Medical Journal, Volume II, October 26, 1938, page 1077.

(4) A. R. Culley: "Acute Bulbar Paralysis", ibidem, Volume II, December 17, 1938, page 1281.

(5) A. B. Sabin: "Experimental Pollomyelitis by Tonsillopharyngeal Route, with Special Reference to Influence of Tonsillectomy on Development of Bulbar Poliomyelitis", The Journal of the American Medical Association, Volume CXI, 1938, page 605.

(6) A. B. Sabin and P. K. Olitsky: "The Olfactory Bulbs in Experimental Pollomyelitis: Their Pathological Condition as Indicator of Portal of Entry of Virus", ibidem, Volume CVIII, 1937, page 21.

(7) L. W. Smith: Personal communication quoted by Sabin and Olitsky.

(6) F. M. Burnet, A. V. Jackson and E. G. Robertson: "Poliomyelitis. III: The Use of Macacus cynomolgus as an Experimental Animal", The Australian Journal of Experimental Biology and Medical Science (in the press).

(6) F. M. Burnet, A. V. Jackson and E. G. Robertson: "Poliomyelitis I: Intraocular Inoculation as a Standard Method for the Demonstration of Neutralizing Antibodies", The Australian Journal of Experimental Biology and Medical Science. Volume XVII, 1939, page 253.

Reports of Cases.

THE GUILLAIN-BARRÉ SYNDROME.

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An ætiologically obscure disease does not, of necessity, carry a bad prognosis. A good example of such a malady is the Guillain-Barré syndrome—a symptom-complex having a sufficiently characteristic natural history and clinical course to make it readily recognizable.

For reasons to be stated subsequently, it is desirable that practitioners should be familiar with this syndrome. We therefore wish to draw attention to it by placing on record the following case histories of patients who have come under our observation in the course of the last six months

Case I.

D.A., a dairy farmer, aged thirty-seven years, who had been subject to attacks of migraine et cetera for the last twenty years, came to seek medical advice because his headaches, for the last month, had been of greater severity and of longer duration than usual. He attributed this change for the worse to some strenuous work that he was obliged to do when exposed to a very hot sun. He also had some unexplained vomiting attacks, and stiffness of the neck. For one week, he continued to work after a fashion, in spite of these three symptoms; but one morning he awakened with a feeling of stiffness, heaviness and he awakened with a feeling of stiffness, neaviness and aching in his lower extremities, which was quickly followed by great weakness and a sensation of "pins and needles". On medical advice he took to his bed. During the course of the next five days he observed that his lips and tongue would not work properly, that he was unable to blink his eyes or to taste his food.

On examination the left pupil was seen to be smaller than the right and both pupils reacted to light and convergence. The fundi were healthy. The sense of smell was normal, but that of taste was greatly impaired. The neck was stiff, and a bilateral seventh nerve paralysis of the infranuclear type was present. All four limbs were weak, the lower limbs being more severely affected than the upper. All the tendon reflexes were absent, or were elicited only with difficulty and after repeated attempts. Even when a response was obtained, it was very feeble. There was no diaphragmatic involvement, and at no stage

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of the illness was any fever present. The cerebro-spinal fluid was normal in pressure and composition except that the protein content was increased (150 milligrammes per 100 cubic centimetres) and the response to the globulin test was strongly positive. The mental attitude of the patient was noteworthy. Although lying in bed quite helpless, he was amazingly unconcerned about his disability. The patient remained in hospital for one month. Taste returned, the facial palsies disappeared, and power returned to the limbs; all tendon reflexes reappeared and the patient left hospital without symptoms. He was investigated for lead and arsenic intoxication, with negative results. Alcohol could be excluded with certainty. On his discharge from hospital the cerebro-spinal fluid still contained 100 milligrammes of protein per 100 cubic centimetres. By letter, he has recently reported that he is perfectly well and doing hard manual work.

Case II.

I.J., aged nine years, had suffered from pains in, and weakness of, all four limbs for a fortnight. For the last week she had commenced to stagger, and finally, for the forty-eight hours before her admission to hospital, she had been unable to walk at all. At no time had she been feverish. She was admitted to hospital with the provisional diagnosis of anterior poliomyelitis.

On examination, she was seen to be a large, fat, sunburnt, phlegmatic child, with generalized weakness of all four limbs. She appeared to be quite unconcerned about her almost complete helplessness. The cranial nerves were intact, and all tendon reflexes were absent, with the exception of the knee jerks, which sometimes, after much persistence, gave a very feeble response. The patient could walk a few steps only, and her gait was extremely awkward and ataxic. There were no abnormal sensory findings, and no fever was present at any stage of the illness. The cerebro-spinal fluid was normal in pressure and composition, except that the protein percentage was increased (400 milligrammes per 100 cubic centimetres).

The patient remained in hospital for one month, during which time power gradually returned, the ataxia disappeared and all tendon reflexes reappeared. On her discharge from hospital she feit perfectly well, and function was completely restored; but the protein content of the cerebro-spinal fluid remained at 200 milligrammes per 100 cubic centimetres.

Case III.

M.G., aged two years, six weeks before admission to hospital had burnt her left foot. The burn healed rapidly, but for the past five weeks the patient had been unable to use her legs or to feed herself; she had become very languid, and ceased to take an interest in her surroundings. She had some incontinence of fæces and urine, but this was intermittent. She could sit up, but refrained from doing so. She was sent to hospital with the provisional diagnosis of tuberculosis of the thoracic portion of the spine.

On examination the little girl was seen to be lying comfortably in bed, listless and apathetic. She could sit up, but held on to the side of the cot in so doing. Slight scoliosis, with the convexity to the right, was present in the lower thoracic and upper lumbar regions. The pupils and fundi were normal and there was a general flaccid paresis of the lower limbs. No neck rigidity and no changes in sensation were discovered. The knee Jerks and ankle jerks were absent; both plantar responses were flexor in type and the abdominal reflexes were present in all four quadrants. The cerebro-spinal fluid was normal in pressure and composition except that the total protein content was increased (150 milligrammes per 100 cubic centimetres) and that the response to the globulin test was strongly positive. There were no abnormal radiological findings.

Two weeks after the patient's admission to hospital, it was observed that her face had become expressionless and that she had difficulty in chewing and swallowing food. These signs lasted for only four days. Six weeks later, however, she could walk fairly well, although slight

bilateral foot-drop was present. The total protein content of the cerebro-spinal fluid immediately before her discharge from hospital was 180 milligrammes per 100 cubic centimetres—an increase of 30 milligrammes above the value obtained seven weeks previously. On her discharge she could walk perfectly and had no obvious disability. The illness was apyrexial throughout its course.

Case IV.

A.B., aged twelve years, was admitted to the Royal Prince Alfred Hospital on August 11, 1938. The parents stated that the patient had been quite well until three weeks previously. She had then vomited several times and complained of headache. In spite of this she was allowed up and sent back to school, but she seemed listless. A week later she was sent home because she was unable to write. At this time she complained of numbness in the right leg and some slight headache occasionally.

On her admission to hospital, weakness of her upper limbs prevented her from writing or feeding herself. Walking was also very imperfectly performed owing chiefly to weakness of the right lower limb. Her temperature throughout the illness was normal except for an occasional rise to 100° F. Examination of her cranial nerves revealed a slight weakness of the right side of the face and some nystagmus on looking to the right. The fundi were normal. There was distinct incoordination of the movements of the hands, and weakness of both lower limbs, especially the right, was present. The abdominal reflexes could not be elicited. Both plantar reflexes were flexor in type. Some impairment of common sensibility was apparent in the right lower limb. The knee and ankle jerks were elicited with difficulty, especially on the right side.

Ten days later the facial paralysis was commencing to disappear, but the right upper limb now exhibited weakness and an absence of the tendon reflexes. The legs appeared to be paralysed, but moved in response to painful stimulation. The right knee jerks completely disappeared.

A month after her admission to hospital the patient began to vomit with such frequency that she exhibited signs of dehydration and the intravenous administration of fluid became necessary. Gross distention of the stomach was obvious on physical examination and four and a half pints of fluid were aspirated from the organ. This permanently arrested the vomiting and the patient's condition rapidly improved. She was discharged from hospital seven weeks after admission, having completely recovered the use of her arms and legs. She visited the hospital one month later, and a careful examination of her nervous system failed to elicit any abnormality.

The Wassermann and Kline tests were applied to the blood and the cerebro-spinal fluid without result. Throat swabs were taken on several occasions, but no growth of Corynebacterium diphtheriæ was obtained after 48 hours' incubation. An X ray examination of the skull revealed no abnormality. The responses of the muscles to faradic stimulation were normal when they were tested ten days after the patient's admission to hospital. A blood count failed to reveal any sign of anæmia. The total number of white cells was normal, the differential count showing that 27% to 38% were lymphocytes. On her admission to hospital the cerebro-spinal fluid pressure was normal. The fluid was found to contain 20 milligrammes of protein per centum. Ten days later this was increased to 35 milligrammes per centum. A final reading two weeks before her discharge resulted in a still higher value—68 milligrammes per centum. Some cells, a few of which were polymorphonuclear, were also found occasionally in the fluid.

The points of interest from this case are the following:
(i) the apparent onset with vomiting, three weeks before
objective, nervous signs appeared; (ii) the progressive rise
in the protein content of the cerebro-spinal fluid from
normal at the onset to its highest value at recovery; (iii)
the development of symptoms resembling acute dilatation
of the stomach, suggesting involvement of the vagal or
splanchnic nerves or their connexions; (iv) pronounced

tachycardia (110 to 150 per minute) at the height of the nervous involvement; (v) complete recovery in seven weeks after the onset.

Case V.

J.N., aged sixteen months, was quite well until two weeks before her admission to hospital, when her mother noticed that she was crawling about the house instead of walking. One week later she lost the power of her legs and appeared not to be able to move them at all. She had never been feverish and there was no vomiting.

On examination, the child was seen to lie comfortably in bed with the lower extremities in a position of slight general flexion. She was peevish and appeared to be in pain. Paralysis of both lower extremities was present, with some hyperæsthesia when the thighs were squeezed. All the tendon reflexes were absent. The cranial nerves were normal and there was no neck rigidity. The cerebrospinal fluid was under normal pressure and of normal composition, except that it contained 250 milligrammes of protein per 100 cubic centimetres. There was no fever.

One week after the child's admission to hospital the weakness of the lower limbs became more pronounced and the paralysis seemed to be extending upwards to involve the abdominal muscles. Respiration was rapid and distressed, and although intercostal action was good there seemed to be little diaphragmatic movement. Eight days after her admission the child had to be put in the respirator. Respiration had become noisy and there were scattered rhonchi in the chest, especially towards the bases. Three weeks after her admission to hospital the lower lobe of the left lung was consolidated, and she was treated with "M & B 693" and atropine. At this stage she was spending eight hours a day in the respirator. A few days later she suddenly collapsed, turned blue and became pulse-She was put back immediately into the respirator and stimulant treatment was given. For the next fortnight her condition appeared to improve, but she became distressed if she was left out of the respirator for long. Eight weeks after her admission the child suddenly collapsed and died. Investigations performed in hospital excluded the possibility of lead intoxication or scurvy. Except for some slight fever at the terminal pneumonic stage, the illness was apyrexial throughout.

An autopsy was performed by Dr. Phyllis Anderson three hours after death, with the following results:

Skull.—The meninges were normal. There was a slight excess of cerebro-spinal fluid in the subarachnoid space. The hemispheres, brain stem and spinal cord all appeared of normal morphology on external examination.

of normal morphology on external examination.

Thorax.—The thymus gland was normal and pale in colour; it weighed four grammes. The right lung weighed 115 grammes and the left 75 grammes. The right pleural cavity contained a small amount of turbid fluid, approximately five cubic centimetres; and there was a small amount of fibrinous exudate over the parietal pleura and the visceral pleura over the posterior part of the lower lobe of the lung, which was in a state of red consolidation. There was also some consolidation in the posterior part of the upper lobe. Section of the lung revealed an exudate of pus from small bronchioles, with areas of suppuration around them, and there was much fluid pus in the larger The left lung was in a more advanced state of suppuration; but no superadded red consolidation and no pleurisy was present. Both upper and lower lobes were affected, and there was a line of demarcation approximately along the anterior axillary line, beyond which the lung was pale and crepitant. The hilar and paratracheal glands were swollen, engorged and tense. The heart weighed 52 grammes; the pericardium contained about five cubic centimetres of straw-coloured fluid. The valves of the heart were normal; the myocardium was pale and soft. The foramen ovale and ductus arteriosus were closed.

Abdomen.—The liver weighed 450 grammes, and was intensely engorged. The gall-bladder was filled with green bile. The spicen was small and pale, with very prominent Malpighian bodies; it weighed 27 grammes. The stomach and intestines were normal on external examination. The kidneys were slightly congested, but normal in size and

shape. The right kidney weighed 48 grammes and the left 49 grammes. The pelvic organs were normal. Portions of the phrenic, ilio-inguinal, and sciatic nerves were removed for special examination.

Histology.—Though this child was said, and appeared, to have lost the use of her legs and abdominal muscles, there were no macroscopic or microscopic changes in the brain, spinal cord or peripheral nerves supplying the affected parts to account for the condition.

Dr. Anderson concluded that death appeared to have been due to septic bronchopneumonia with an obstructive degree of purulent bronchitis.

Case VI.

G.F., aged twenty years, a clerk, was admitted to hospital complaining of headache of twelve days' duration and of paralysis of the legs of five days' duration. When the headache commenced it was intermittent and slight; but it became continuous and severe, and was unrelieved by drugs and aggravated by ocular movement. In distribution the headache was frontal and occipital. For the first week of his illness the patient continued at work; he felt very weary, but apart from the headache he was fairly well. But one week after the headache commenced he awakened to find that his legs were very weak. He started to go to work, but after shuffling along the street for a little way, was obliged to return home to bed. Besides the weakness, he had some aching and feeling of "pins and needles" in his lower extremities. He had noticed some blurring of vision in the left eye, but there was no diplopia. Once or twice food had seemed to be caught in the back of his throat when he attempted to swallow, and for some unknown reason he had vomited twice in the twenty-four hours before his admission to hospital.

On examination he was seen to be a young, athletic type of man, lying comfortably in bed, with a somewhat lethargic and disinterested expression. Slight ptosis of the right upper eyelid and drooping of the right corner of the mouth were present. The right pupil was greater in diameter than the left, and both pupils reacted well to light and accommodation. There was weakness of both lower limbs and also of the extensors of the forearms. All four limbs were quite flaccid, but there was no evidence of atrophy. The house physician noted that there appeared to be some weakness of the back and abdominal muscles. Except for pain on pressure upon the calves and hamstrings there were no abnormal sensory findings. The tendon reflexes were absent in the lower extremities and feeble in the upper extremities. The abdominal reflexes were flexor in type.

The patient was in hospital for six weeks, and the illness was apyrexial throughout its whole course. The cerebrospinal fluid was under normal pressure and normal in composition, except that its total protein content was increased (250 milligrammes per 100 cubic centimetres), and the globulin test elicited a strongly positive result. After a fortnight the cranial nerves became normal, and after three weeks considerable power had returned to the arms, legs, back and abdomen. The patient expressed himself as feeling "marvellous"; but he could not yet walk. At this stage of the illness it was noticed that his voice was hoarse, and the laryngologist noted a paresis of his vocal cords. He also had some sinus tachycardia. Both these symptoms were transient and were thought to be due to vagal involvement. At the end of the sixth week the patient was discharged from hospital, perfectly well. The protein content of the cerebro-spinal fluid was still 240 milligrammes per centum.

Three months after his discharge the cerebro-spinal fluid of this patient was again examined; the protein percentage was normal.

Case VII.

J.R., aged sixteen years, reported to the out-patient department of the Royal Prince Alfred Hospital, complaining of stiffness and weakness of his arms and legs for the past week. One night he went to bed perfectly well, and on awakening he noticed that his left leg was stiff and weak. For one hour he walked about the house with a of

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limp. On leaving the house to go about his business he felt the same sensation in his right leg and was thus obliged to remain at home. These lower limb symptoms seemed to diminish; but a few days later his upper extremities became affected. Hitherto he had utilized his upper extremities to grip stable objects in assisting locomotion, but after his arms became weak he fell down on five occasions, on three of which he was going downstairs. He noticed that his neck was a little stiff. He was admitted to hospital with the tentative diagnosis of either peripheral neuritis or hysteria.

On examination, the patient was seen to be a thin boy, lying helplessly in bed. There was a lack of movement in all four extremities. He was continually grinning and giggling and seemed to be actually amused about his When assisted to walk, his gait showed all the signs of extreme flaccidity and weakness of the muscles of the extremities. The cranial nerves were normal and there were no sensory changes. There was severe paresis of the muscles of all four limbs and also of those of the back and abdomen. He could not sit up. There was no back and abdomen. He could not sit all signs of wasting. The deep reflexes of the upper extremity were present, and those of the lower extremity were elicited with difficulty. The abdominal reflexes were present and the plantar response was flexor in type. Beyond an increase in the total protein content (40 milligrammes per 100 cubic centimetres) and the presence of globulin, the cerebro-spinal fluid was normal. Response to faradism was normal in the upper extremities and greatly reduced in the lower extremities. On the ninth day after his admission to hospital the patient was feverish and complained of pain and swelling in the right ankle. Two days later, the pain had gone from the right ankle and was present in the left. The pulse rate rose to 95 per minute, and there was a slapping first sound at the mitral area. The blood sedimentation rate was 24.5 millimetres at the end of one hour. The leucocytes numbered 14,050 per cubic millimetre, 67% neutrophile cells. Salicylates were administered Salicylates were administered, and in four days the patient had had no recurrence of his joint pains and no fever, while the pulse rate had dropped to 70 per minute. We regarded this episode as a mild attack of rheumatic fever. Before this attack, and for the rest of the patient's stay in hospital, the temperature was normal. Meanwhile the patient's strength gradually improved. In the middle of his pyrexial attack power in the arms and back returned, and he could sit up without difficulty. By this time the tendon reflexes of the lower limbs could be easily elicited, but they were weak. From then on he rapidly improved, and after six weeks in hospital the motor power had completely recovered. The cerebro-spinal fluid was examined each week with the same result as stated above. At the final examination on the day before his discharge from hospital, the protein content was 30 milligrammes per 100 cubic centimetres-a drop of 10 milligrammes as compared with the previous readings.

General Considerations.

The clinical features of the syndrome may now be summarized as follows:

1. It is an apprexial malady occurring in childhood and adult life, of fairly acute but not dramatic onset, with vague prodromata such as headache and stiffness of the

2. The presenting symptom is weakness, and this striking clinical feature is widespread. The presenting signs are moderately severe paresis, always of a lower motor neurone type, with a minimum of sensory disturbances, subjective or objective. There is usually an absence of sphincteric involvement.

3. Mental turmoil, fear of the future, doubts concerning recovery, are all conspiculously absent. On the contrary, the emotional state is one of euphoria, notwithstanding the presence of severe disability. It is reminiscent of "la belle indifférence" (Janet).

4. The protein content of the cerebro-spinal fluid is always raised and the response to the globulin test is positive; otherwise the fluid is consistently normal.

Recovery is the rule, no matter how severe and how widespread the paralysis.

Diagnosis.

The key to the diagnosis of this disease lies in the recognition of the following points:

1. The absence of pyrexia.

The diffuse and almost selective action of the unknown causative factor on the lower motor neurone units of the spinal cord and their cranial homologues.

3. The striking increase of the protein content of the cerebro-spinal fluid combined with the absence of cellular reaction—"la dissociation albumino-cytologique" of the French or the "acellular hyperalbuminosis" of the American authors.

4. From the psychical aspect, the complete detachment of the patient from what, at one stage of the disease, should be a terrifying experience. This mental change, very definite in our cases, does not appear to have received sufficient emphasis hitherto.

5. The uniform, spontaneous and complete clinical recovery, in spite of the persistence of the increased protein content of the cerebro-spinal fluid. The completeness of recovery in our cases is strikingly demonstrated by the fact that, with one exception, we have been unable to persuade the patients to return to the clinic for subsequent "follow-up" investigation of the cerebro-spinal fluid.

6. Muscular wasting, never severe, always transient and

completely recoverable.

Differential Diagnosis.

The differential diagnosis consists in a consideration of other conditions characterized by paresis or paralysis of the lower motor neurone type.

1. Acute poliomyelitis: One of the commonest errors in this country is to mistake this benign malady for acute poliomyelitis (the Heine-Medin disease). Poliomyelitis is, of course, almost always pyrexial at some stage. It selects muscle groups rather than limbs. There is no dissociation in the cerebro-spinal fluid between protein and cellular content. The mental state is one of excessive irritability as opposed to the pathological repose of the Guillain-Barré syndrome. The giving of a diagnosis of infantile paralysis on flimsy and insufficient evidence is to be deprecated. This grave error may be avoided with certainty by examination of the cerebro-spinal fluid.

2. Post-diphtheritic paralysis: Generalized paralysis following unrecognized diphtheria may present a real problem. Paralysis of accommodation is fairly constant in post-diphtheritic palsy, as is palatal weakness. This seems never to occur in the Guillain-Barré syndrome. According to Collier, polyneuritis of diphtheritic origin is never associated with high albumin content in the cerebrospinal fluid. Other observers are not so definite on this point.

3. Acute infective polyneuritis (types Gordon Holmes and Rose Bradford): This is actually a polyneuritis, an acute febrile illness followed after a latent period by paralysis with prominent sensory symptoms and associated with a high mortality.

 Metallic and alcoholic intoxication: These are excluded by the history and the usual tests.

5. Tick and spider bite paralyses: These may closely resemble the Guillain-Barré syndrome, and information as to the changes in the cerebro-spinal fluid is wanted. Here the history of bites is usually obtainable.

6. Encephalitis: Following acute exanthemata, a peripheral type of von Economo's disease, diffuse encephalomyelitis or acute myelitis of the ascending or Landry type may all require consideration; but these are characterized by an increase of cells in the cerebro-spinal fluid, an extensor type of plantar reflex, a gradual sensory loss, and involvement of the organic reflexes.

Discussion.

We can add nothing to the views of the original observers of this syndrome, who in 1916 expressed themselves as follows:

Nous attirons l'attention sur un syndrome clinique que nous avons observé chez deux malades, syndrome caracterisé par des troubles moteurs, l'abolition des réflexes tendineux avec conservation des réflexes cutanés, des paresthésies avec troubles légers de la sensibilité objective, des douleurs à la pression des masses musculaires, des modifications peu accentuées des réactions électriques des nerfs et des muscles, de l'hyperalbuminose très notable du liquide céphalo-rachidien avec absence de réaction cytologique (dissociation albumino-cytologique).

Even if such a syndrome was subsequently proved to be a variant of a better known affection or even common to a number of different diseases affecting the nervous system, recognition of its favourable prognosis and its spontaneous disappearance would justify emphasis. The syndrome has apparently not yet made its début amongst us, and we suggest that hitherto it has often been labelled as postdiphtheritic paralysis, or as an abortive or mild form of acute polioencephalitis. It is significant that, in the first instance, the condition of each of our patients was incorrectly diagnosed, and the true nature of their trouble was revealed by the natural history of the malady.

Affinity with the rather vague group of infective polyneuritides occurring in soldiers in the Great War, such as those described by Rose Bradford et alii, must be close, from both ætiological and clinical aspects. The discrepancy in histopathological appearances between them all may be one of degree rather than of kind. The isolated instances, such as our own Case V, in which an opportunity has presented itself for autopsy examination of the nervous system in sufferers from the Guillain-Barré syndrome, have been too few to assist in such a conclusion. Unfortunately cerebro-spinal fluid examinations were made in Hyland and Russells's cases would Bradford's series. appear to be more closely allied to Bradford's case than our own. Barker described a case which corresponded more closely in its clinical features, but the disease was febrile with distinct leucocytosis and atrophy of the muscles. We have been unimpressed by suggested causative factors such as "septi-neuritic spread" from areas of focal sepsis, as postulated in Barker's cases, vitamin B, lack et cetera.

With regard to the question of possible vitamin B_1 insufficiency, Findlay's experiments show that avian beriberi may take the form of a functional paralysis of the central nervous system without sensory loss. Post mortem examination of his material, however, revealed an extreme degree of atrophy of all tissues and organs, with complete loss of Nissl granules from the nerve cells. These appearances differ considerably from those in the autopsy in our case, and the previous diet of our patients was not such as to suggest any striking lack of this vitamin, while rapid recovery occurred without any particular alteration in the food consumption.

The action of the causative factor concerned is akin to that of a specific neurotropic virus which does not appear to require activation by a local or general infection. Ansay described a child who was typically affected and reviewed the Continental literature. He stated that his patient was only the fifth instance of the occurrence of the syndrome in children. In view of this it is surprising that three of our seven patients were children.

Summary.

We have endeavoured to emphasize the existence in this community of a transient nervous affection, in the clinical form of a polyneuritis, identical with that described by Guillain and Barré a quarter of a century ago. In so far as we have been able to observe seven instances of the disturbance within a few months, it is possible that the disease is by no means a rare one. A rapidly progressive, often ascending paralysis or paresis and ataxia, with a minimum of sensory symptoms and general disturbance of health, is accompanied by a considerable increase of protein, but not of cells, in the cerebro-spinal fluid. fusion with abortive forms of poliomyelitis, encephalitis and post-diphtheritic palsy is inevitable, unless careful attention is paid to these changes. Recovery is rapid, complete and permanent, without residual muscular We have no information to offer as to the atrophy. ætiology and infectivity of the disease, nor its trans-missibility to animals. The one autopsy in our series revealed nothing of importance at all.

Acknowledgements.

The patients upon whom this report is based were under the care of various members of the honorary staffs of the Royal Prince Alfred Hospital and the Royal Alexandra Hospital for Children. We gratefully acknowledge the kindness of those colleagues in allowing us access to their

Bibliography.

J. Ansay: "Contribution à l'étude du syndrome polyradiculo-névritique de Guillain et Barré chez l'enfant", Journal beige de neurologie et de psychiatrie, Volume XXXVII, 1937, page 311. L. F. Barker: "Acute Diffuse (Cerebral and Spinal) Poly-radiculoneuritis following Oral Sepsis: Probability of Super-imposed Infection with Neutrotropic Ultravirus of Schwanophil Type", Archives of Neurology and Psychiatry, Volume XXXI, 1824 page 827.

radiculoneuritis following Oral Sepsis: Probability of Superimposed Infection with Neutrotropic Ultravirus of Schwanophil Type", Archives of Neurology and Psychiatry, Volume XXXI, 1934, page 837.

E. H. Bradford, E. F. Bashford and J. A. Wilson: "Acute Infective Polyneuritis", The Quarterly Journal of Medicine, Volume XII, 1918, page 83.

G. M. Findlay: "An Experimental Study of Avian Beriberi", The Journal of Pathology and Bacteriology, Volume XXIV, 1921, page 175.

A. E. Garrod, F. Batten and H. Thursfield: "Other Forms of Progressive Muscular Atrophy due to Spinal Disease", Diseases of Children, 1913, page 840.

J. B. Gillespie and E. H. Field: "Acute Polyneuritis of Uncertain Origin (Guillain-Barré Syndrome)", The Journal of Pediatrics, Volume IV, March, 1939.

G. Guillain: "Radiculoneuritis with Acellular Hyperalbuminosis of Cerebrospinal Fluid", Archives of Neurology and Psychiatry, Volume XXXVI, 1936, page 975.

G. Guillain and J. A. Barré: "Quelques remarques sur notre syndrome de radiculo-névrite avec hyperalbuminose du liquide céphalo-rachidien sans réaction cellulaire", Revue neurologique, Volume LXV, 1936, page 573.

G. Guillain, J. A. Barré and A. Strohl: "Sur un syndrome de radiculo-névrite avec hyperalbuminose du liquide céphalo-rachidien sans réaction cellulaire. Remarques sur les caractères cliniques et graphques des réfexes tendineux". Bulletin et mémoires de la Société médicale des hôpitaux de Paris, Volume XL, 1916, page 1462.

W. Harris; "Toxic Polyneuritis", Brain, Volume XLV, 1922, page 415.

M. S. Hecht: "Acute Infective Polyneuritis in Childhood",

W. Harris, "Toxic Polyneuritis", Brain, Volume XLV, 1922, page 415.
M. S. Hecht: "Acute Infective Polyneuritis in Childhood", The Journal of Pediatrics, Volume II, 1937, page 743.
H. H. Hyland and W. R. Russell: "Chronic Progressive Polyneuritis, with Report of Fatal Case", Brain, Volume LIII, 1930, page 278.
L. Laruelle and L. Massion-Verniory: "Contribution au syndrome polyradiculo-névritique de Guillain-Barré". Journal belge de neurologie et de psychiatrie, Volume XXXVII, 1937, page 635.

Motes on Books, Current Journals and Dew Appliances.

A HÆMATOLOGICAL ATLAS.

THE first edition of "Clinical Atlas of Blood Diseases". by Dr. A. Piney and Dr. Stanley Wyard, was reviewed in this journal in the issue of April 26, 1930. It has now reached its fourth edition.1 The high standard set in earlier editions has been maintained. The book has its main value in its illustrations (42 in all), which have been beautifully and truly made and faithfully reproduced. reading matter consists of statements of the essential features of diseases affecting the blood, an all too brief description of the technique of blood examination, and a glossary. Owing, presumably, to limitations of space, the authors have employed an unhappy telegraphic style of writing. This gives an impression of haste and in places tends to obscure the meaning, necessitating rereading. Still, a surprisingly large amount of information has been condensed into the 80 odd pages of text. The book is of value as long as it is regarded purely as an atlas for hasty reference and not as a text-book on hæmatology.

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^{1&}quot;Clinical Atlas of Blood Diseases", by A. Piney, M.D., M.R.C.P., and S. Wyard, M.D., M.R.C.P.; Fourth Edition; 1938. London: J. and A. Churchill Limited. Large crown 8vo, pp. 143. with 42 illustrations, of which 38 are in colour. Price: 12s. 6d. net.

The Medical Journal of Australia

SATURDAY, FEBRUARY 3, 1940.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

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THE MEDICAL PROFESSION AND THE FUTURE.

A GREAT deal has been heard recently of war aims and of peace aims; their definition has been urged and statesmen have to some extent met the demand. Most people will agree that aims of this sort should be stated, but many will find great difficulty in formulating their own ideas on the subject. Even on the broadest general principles divergence of opinion will be expressed. Thus, we are told that the Allies are fighting not against the German people, but against the system of government at present being exploited in the Reich; and there are those in our midst who hold that the distinction is artificial and in fact impossible. Be that as it may, British people as members of a democracy, imperfect though it be, would have all the peoples of the earth enjoy a freedom of thought, word and action that their spiritual, mental and bodily welfare might develop unfettered by predatory force. But while we abhor the ruthless methods and insensate cruelties of Nazism and are tempted to look on everything of Nazi origin as being necessarily evil, we have need to beware lest we credit ourselves with nothing but virtue and try to hide our deficiencies under a cloak of self-righteousness.

While the British race is doubtless more advanced than some others in the provision of means by which the individual may enjoy freedom and develop his personality, we have not always been ready to legislate for the less fortunate members of the community and there are still to our shame many inconsistencies in our national life and many gaps to be filled. That in our so-called democracy many people barely exist is a national disgrace and something of which the nation should be ashamed. We aim at a freedom of thought as well as of speech and action; and for many in the community this is impossible because they are struggling to live. They must be given an opportunity of decent living before they can be taught to use opportunities that are provided for them. Medicine can help people in their way of living, and this is known to every medical practitioner.

Society has for long been undergoing an evolution, most obvious perhaps in the history of the last two hundred years. The process has been mainly what may be called a levelling-up of the different strata of society. It has given opportunities of intellectual development to those who would not in earlier days have enjoyed them; and it has brought to many material advantages. included among which must be numbered those following on the recognition and conquest of many This evolution is a continuous and inevitable process; it cannot be stayed in its progress, though it may be slowed down by stupidity or evil design. These facts are not recognized as they should be. The war of 1914-1918 gave an impetus to this evolution; and the present conflict will do the same. Dr. A. E. Brown, of Colac, Victoria, put the facts clearly in a letter to this journal last November when he stated that "the urgent need for efficiency in a time of national emergency brings to light many weaknesses in our social organizations, which have previously been passed tolerantly over". He added that "in the ensuing reorganization much that is purely traditional is swept away if it cannot fit in with the scheme of efficiency, however much it may have been treasured in the past". "Though the emergency passes, the impetus to planning does not, but

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remains to constitute a permanent step forward in the social scheme." Many medical practitioners do not understand, or, understanding, forget, that the evolution has affected medical practice and will affect it in increasing degree in the future. This is not only a result of the evolution of society per se. but has to do also with the channels along which medical science itself is developing. It may be that there are in the profession foolish persons who would try at all costs to preserve the status quo by trying to adapt altered conditions to their own needs instead of recognizing their duty to society. Dr. Brown pleads that thought should be given to this matter "to see if we within our own ranks cannot devise some plan to meet future social needs". The needs of society must be met; they will be met. Ideally medical practitioners will do what they can in their own sphere to meet them "for love of the brethren"; those not activated by this motive may perhaps be spurred to thought and action by the recognition that social evolution is inexorable and certain-it is, to say the least of it, more pleasant to plan with understanding than to be compelled to conform to the plan of someone else who has insufficient knowledge.

If Australian medicine is to take its place in the constructive work that lies ahead, its followers will need to take stock of themselves, of their objectives. of their ideals and of their very reason for existence. They must show by their actions-by their plans for the future and their deeds in the present-that they recognize their duty to society as servants of the community and not as trying to bend society to their own service. If need be, they must be prepared to make sacrifices in the common good, not grudgingly or of necessity, but gladly and of a free heart that they may fulfil their destiny. The medical profession of Australia has its official organizations; it has offered to serve, and is serving, the country in the prosecution of the war; let it now turn its thoughts to the altered conditions that are likely to arise in the reconstruction period after hostilities have ceased, so that when service is required there may be no uncertainty and no delay. By making it clear that the welfare of the community comes first in all its plans and its

own comfort second, the medical profession may set an example in the moral rearmament about which a great deal is talked at present. Individually and collectively we need to become better men and better women; otherwise, as has so well been put, we may win the war and lose the peace.

Current Comment.

THE PREVENTION AND CONTROL OF HÆMORRHAGE IN OBSTRUCTIVE JAUNDICE.

OBSTRUCTIVE JAUNDICE used to be a sort of no man's land. The physician may hesitate to recommend surgical intervention, arguing that if the cause of the obstruction is neoplastic only a palliative measure can be attempted, and, on the other hand, if it is due to a stone it is possible that the block may, like the ears of the deaf in scriptural prophecy, be unstopped. The surgeon may also hesitate, as he knows that the deeply jaundiced patient cannot be described as a good operative risk and that the prothrombin deficiency may set in train hæmorrhage difficult to control. Of course recently a more liberal view has been taken of the subject and most practitioners now seek to avoid the dilemma by making up their minds early, so that if operation is to be contemplated it is performed before liver function becomes seriously impaired. Nevertheless the adoption of a low fat diet, the symptomatic treatment of vomiting and the administration of calcium, in which we still seem to retain a pious faith in an extraordinary variety of conditions, have been the only preoperative measures adopted. It would seem now that vitamin K is of considerable value in such cases. Stuart R. Townsend and Edward S. Mills have made a preliminary report on the use of vitamin K and bile salts in the prevention and control of the hæmorrhagic diathesis in obstructive jaundice.1 They point out that it is curious that a comparable deficiency state has been recognized in cattle for some years-another instance of the desirability of a close liaison between veterinary and human medical practice. After giving ten case histories illustrating the value of using vitamin K together with bile salts, they discuss the relevant literature. Studies of the blood chemistry in obstructive jaundice show that the blood fibrinogen is seldom altered in amount; its level may be slightly elevated or normal, and it tends to fall only when liver damage is extensive and severe. Calcium is but little disturbed, though some authorities believe that there is some functional deficiency of calcium. If, then, the calcium and fibrinogen are not quantitatively altered in the blood, an increased tendency to bleed can be due only to alterations in the prothrombin level; and experiments have proved that this is so. The veterinary authorities have

¹ The Canadian Medical Association Journal, August, 1939.

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recognized hæmorrhagic disease in cattle that have eaten improperly cured sweet clover, and in chickens receiving a low fat diet. Both these conditions can be controlled by the administration of hog-liver fat or alfalfa, better known to us as lucerne. hæmorrhagic affections in man due to similar deficiencies are caused by the lack of a fat-soluble substance now known as vitamin K, about which literature is accumulating. Townsend and Mills found that the administration of from 2,000 to 3,000 units or more of vitamin K and one or two grammes of bile salts per day promptly caused a return of the diminished prothrombin content of the blood to a normal level. The coagulation time of the blood also returned to normal. In one of their cases only did failure occur, and for this they can give Apparently there is no adequate explanation. failure to absorb fat-soluble substances from the intestinal tract in obstructive jaundice, owing to the lack of bile, and this explains the reason for the simultaneous administration of bile salts and vitamin K. It would appear that massive dosage with this vitamin is also possible and that adequate absorption may be obtained in a short period of time. It is interesting that desiccated bile or some preparation of bile salts has been found of value in the treatment of other forms of disease of the biliary tract, such as cholecystitis. A point made by the authors is that the feeding of the jaundiced patient with a diet poor in fat will predispose to K avitaminosis. It looks as though jaundice is still a very promising subject for clinical and biochemical study.

DUODENAL ULCERS PERFORATING THE PANCREAS.

While strict and extended medical treatment is the therapeusis of choice in chronic peptic ulceration, and while some 80% of patients suffering from duodenal ulcer respond to such a régime as that laid down by Hurst, it must be remembered that the remaining 20% either do not respond or suffer recurrences, being far from well between the periods of exacerbation. This 20% is made up largely of patients with chronic perforating ulcers situated on the posterior aspect of the duodenum, proximal to the ampulla of Vater. Ulcers on the anterior aspect of the duodenum perforate into the peritoneal cavity; ulcers on the posterior aspect of the duodenum erode the pancreas and adjacent vessels and cause often torrential hæmorrhage. It is in this latter class that surgery is indicated when the diagnosis of chronicity is established by the persistence of symptoms in spite of methodical and efficient medical treatment. J. Shelton Horsley has recently discussed before the American Surgical Association the problems that these ulcers present, and has sifted his results in some 20 cases of partial gastrectomy for ulcers eroding the pancreas.1 He points out that the history is often a long one, that medical treatment affords no relief, vomiting is

inconstant, and there is a complaint of persistent discomfort and tenderness in the epigastrium. There is considerable danger of bleeding, and most of the fatalities due to hæmatemesis are from ulcers that have eroded the pancreatic tissues and neighbouring vessels. X ray examination often fails to show any irregularity of the duodenum, and gastroscopy is of no help. Biochemical tests for associated pancreatitis afford no clue as to the site of the lesion. The diagnosis is most often made from a careful history, coupled with the complaint of pain in the back, simulating a kidney pain. When the ulcer has deeply eroded the pancreas and become anchored, partial gastrectomy holds out the best hope of cure. While there is no universally accepted operative procedure in such cases, the tendency is towards a more radical removal of the acid-secreting and ulcer-bearing portion of the stomach. It has been estimated that the acid gastric juice can be reduced to below the level at which ulceration can occur by removal of somewhat over three-quarters of the stomach. Cautery excision of such ulcers is to be deprecated, as it is so frequently followed by recurrence of symptoms. Distally the resection of the duodenum must extend wide of the ulcerated area and include the affected segment of pancreas, but should stop at such a point as to allow invagination of the duodenal stump without encroachment on the common bile duct.

Horsley favours the Billroth I type of operation, the upper border of the stomach being united to the upper border of the flared-out duodenum. He maintains that this follows physiological lines and reduces the percentage of marginal ulceration, as the duodenum is more resistant to the gastric juice than the jejunum. Other surgeons expert in gastrectomy will not entertain the Billroth I operation as a sound procedure. Frank Lahey, for example, disagrees with any procedure that restricts the removal of an adequate amount of stomach; he states that there is a tendency to remove too little when the surgeon is faced with the problem of bringing a short stump of stomach over to a fixed duodenal stump.

Subtotal gastrectomy with end-to-side anastomosis of jejunum to stomach is the procedure in greatest Finsterer attacks ulcers perforating the favour. pancreas by leaving the anchored ulcer (if it is not one from which recent hæmorrhage has occurred). turning the stomach in proximal to the pylorus and then performing a high gastric resection. Horsley also stresses that when resection of the ulcer is carried out the superficially infected portion of pancreas should be removed with it. Pancreatic fistula is not a danger to be feared provided the pancreas is not deeply incised. Whatever operation is performed, however, medical treatment forms an essential part of the management both before and after operation. Temporary duodenal feeding by a tube placed distal to the line of anastomosis is advised by Horsley. The tube may be passed through the nose or through a gastrostomy opening made at the time of the operation for ablation of the eroding ulcer.

¹ Annals of Surgery, October, 1939.

Abstracts from Current Gedical Literature.

SURGERY.

Postponement of Rib Regeneration

after Thoracoplasty.

E. LEURET, E. LOUBET AND J.

MAGENDIE (Revue de la Tuberculose,
February, 1939) have applied an
ethereal solution of tannin to the rib
bed at the time of operation to delay
periosteal bone formation after
thoracoplasty, and state that the
preparation has several advantages
over formaldehyde. They have found
that the formation of new bone is
delayed for one to three months,
during which period progressive
shrinkage of the lung may occur.

Arthrodesis for Tuberculosis of the Hip Joint.

E. H. A. Pask (The British Journal of Tuberculosis, January, 1939) summarizes the indications for arthrodesis in tuberculosis of the hip joint. The operation should be performed only for old quiescent disease in which there is increasing deformity, for recurrent disease (due time being allowed for subsidence before operation is undertaken) and for persistent pain in a joint in which the disease appears otherwise quiescent. The operation is not justifiable in children. Both intraarticular and extraarticular arthrodesis should be performed at the same time when possible.

Post-Operative Intestinal Obstruction.

E. S. MORGAN AND F. F. HENDERSON (The Western Journal of Surgery, Obstetrics and Gynecology, August, 1939) discuss post-operative tinal obstruction, with special reference to its early recognition and management. A review is presented of one hundred consecutive cases of mechanical post-operative obstruction, excluding those due to paralytic ileus, newgrowth and hernia. In 98% the obstruction was due to adhesions. The authors enumerate the factors that predispose to the formation adhesions, and discuss the various measures that have been proposed to prevent their development, such as the administration of oils, amniotic fluid, and papain. In considering diagnosis the authors have divided the patients into two groups, according to whether obstruction occurred before or after discharge from hospital. In the early post-operative group the the early post-operative group average time of onset was eight days after operation, while in the late group the average was four and a half years, although 40% occurred in the first twelve months. The authors regard as startling the fact that in the early post-operative group, patients, although under constant surveillance, complained of symptoms of obstruction for an average of 67 hours before operation was undertaken for its relief, and in this group the mortality

rate was 35%. They attribute the delay in the early group to confusing symptoms and to the insidious onset. They urge the value of a second opinion from a consultant who sees the patient as a fresh problem and is not perplexed by the gradual change in the clinical picture. Cardinal symptoms were vomiting (90%), pain (86%), constipation (40%) and distension (17%). The outstanding physical signs were distension (79%), audible hyperperistalsis (68%), tenderness (66%), spasm (51%) and visible peristalsis (12%). The obstruction was situated in the duodenum in 2% of patients, jejunum 3%, ileum 82%, colon 7%. In the late group the more abrupt onset and the presence of an abdominal scar aided the diagnosis. The mortality rate for the whole series (100 patients) was 40%.

Appendicitis with Perforation.

R. WARREN (Annals of Surgery, August, 1939) discusses the problem of drainage of the peritoneal cavity after appendicectomy for acute appendicitis with perforation. The author points out the difficulty of analysing statistical results owing to the absence of a strict classification. He suggests that cases be labelled "perforated" only when there is a record to the effect that a perforation has been recognized by the surgeon or seen by the pathologist, or when cultures of peritoneal fluid show the presence of free organisms. A review of the literature is given, and an analysis is made of 111 cases, in 91 of which drainage was employed. The author concludes that primary closure of the peritoneum in perforated appendicitis without abscess is a safe procedure and warrants further trial.

Gall-Stones and Cancer.

H. Burrows (The British Journal of Surgery, July, 1939) reviews briefly the relation of irritation to the ætiology of cancer. He points out that the chemical carcinogens cholanthrene and methyl-cholanthrene are related to deoxycholic acid of bile. The author refers to experimental evidence that in certain animals elimination of some carcinogens takes place in the bile, and recalls that 1:2:5:6-dibenzanthracene, 3:4-benzpyrene, and methylcholanthrene are soluble in cholesterol, which enters largely into the formation of gall-stones. He carried out a set of experiments on guinea-pigs by implanting various foreign bodies in the gall-bladder. The substances used were pills of plaster of Paris containing cholesterol, similar pills containing 1:2:5:6-dibenzanthracene in addition, and, thirdly, fragments of sterile marine sponge soaked in mutton fat containing 1:2:5:6-dibenzanthracene. The three types of foreign body were introduced respectively into the individuals of three groups of guinea-pigs, each group consisting of six animals. Apart from one operative death the animals survived for periods varying from 79 to 359 weeks. animal on post mortem examination

had carcinoma of the gall-bladder or elsewhere. The author recalls that in another experiment, which he described in a previous communication, gall-stones from non-cancerous patients were implanted into the gallbladder of 33 guinea-pigs. These survived for periods up to 202 weeks, and in no animal did cancer occur.

Human Bite Infections.

P. E. McMaster (The American Journal of Surgery, July, 1939) describes 68 cases of human bite infection, stresses the danger of complications, and describes methods of treatment that gave satisfactory results in his hands. The injuries were received in bare-fist fighting or from deliberate bites. Smears and cultures were made from the discharge in 41 cases. In ten smears both the fusiform bacillus and the spirochæte of Vincent were found; in eleven only the fusiform bacillus was seen, while in the remainder one or a combination diphtheroids, staphylococci or streptococci was found. In five cases attempts at culture were fruitless; but in the majority Staphylococcus aureus was grown, and in a few Streptococcus viridans and Streptococcus hamolyticus were grown. In a few of the severe cases no organisms could be cultivated. As regards treatment, the author concludes that all wounds caused by human teeth should be left open for drainage and not primarily closed. Disinfection with an oxidizing agent, such as hydrogen peroxide or sodium perborate, is helpful. Excision by cautery knife is advisable in the treatment of some wounds. The intravenous injection of neoarsphenamine appears to be without effect.

Shock and Hæmorrhage.

V. H. Moon (Annals of Surgery, August, 1939) discusses the early recognition of the onset of shock. In this condition concentration of the blood occurs and can be measured by the increase in the red cell count, hæmoglobin percentage or plasma specific gravity, or by the decrease in plasma-corpuscular ratio as shown by the hæmatocrit. Of these methods the author favours the red cell count as being the most useful index. Concentration of the blood occurs long before loss of compensation leads to a fall in blood pressure, and the author quotes experimental and clinical evidence to demonstrate its value in giving warning of the onset of shock. The same methods may be used to distinguish between shock and hæmornage, as in the latter condition the blood is not concentrated, but diluted.

The Femoral Neck in Childhood.

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ROBERT OLLERENSHAW (The Proceedings of the Royal Society of Medicine, December, 1938) discusses infantile coxa vara and loosened and slipped upper epiphyses of the femur. He reviews sixteen cases of infantile coxa vara, the pathological changes in which he describes as an "aseptic necrosis". Ten cases were bilateral,

six unilateral; nine were in males and seven in females. The average age of the whole group of patients when first seen was six years, the youngest being two years and the oldest eleven years, A striking feature was the smallness in stature of all these patients. Complete absence of pain characterized these cases in addition to the usual mechanical clinical signs. Radiographic signs which were pathog-nomonic included: (a) a clear area in the neck of the femur quite distinct from the epiphyseal line and distal to it; (b) a fragment of bone shaped like an inverted "V" in the lower part of the clear area; (c) a shortened neck; (d) a decreased angle between neck and shaft; (e) in some cases a trans-lucency of the femoral head and a shelving of the upper part of the acetabulum. The author regards the disease as being a slow necrosis fol-lowed by regeneration of bone, resembling that which occurs in pseudocoxalgia, Köhler's disease and Kienboch's disease. It differs in the fact that regeneration will not occur while weight bearing takes place across the line of the femoral neck, but does occur after realignment of the upper end of the femur so that weight is borne along the line of the All his patients were in the hospital class, but no changes in blood calcium or phosphorus were discovered, nor were any signs of trauma, rickets or renal rickets found. The author states that after onset the condition may rapidly become worse if not treated surgically and may end with the head of the femur several inches below its normal position, with almost femoral neck, with complete inability of the patient to abduct the limb, and an extremely difficult gait. Treatment consisted of a wedge osteotomy to allow the femoral neck and shaft to come into line. This necessi-tates a very wide abduction, and unless this apparently exaggerated position is obtained the operation may fail to produce its desired effect. The result is that body weight is carried almost vertically through the femoral neck, which develops into a really bony structure. The author also describes 22 cases of "slipped" epiphysis, 12 in males and 10 in females. all being between thirteen and sixteen years of age. He agrees that trauma to the upper end of the femur will not produce clean separation of a normal epiphysis, and describes normal epiphysis, experiments indicating that direct strain on the epiphysis in post mortem specimens produced a fracture of the neck of the femur distal to the epiphyseal line, which remained unmoved, at about 45 to 50 pounds. In most recorded cases there is a history of aching in the hip and intermittent limping previous to the acute slipping, the prodromal period being from five weeks to two years. traumata reported are too trivial to produce even a fracture of the femoral neck. but in a diseased epiphyseal line the normal body weight alone is enough to cause a slip. With two

exceptions the author's patients were all heavy children, and 11 were of the adiposo genitalis type. Other observers have reported that 65% of their patients were of the Fröhlich's syndrome type. It is certain that very little growth takes place at the upper epiphysis of the femur after fourteen years of age, and union probably occurs at fifteen years. Repair of a slipped epiphysis takes place always by bone. There is no recorded case of a slipped epiphysis giving way a second time after it has once united. A very large proportion of the patients exhibit endocrine disturbance, which the author regards as the underlying cause. He thinks the endocrine basis should be made clear at every available opportunity, in view of the possibility of such patients claiming compensation under the Workmen's Compensation Act. If these patients can be seen in the pre-slipping stage, the hip should be immediately fixed in plaster and all weight bearing prevented for three months; a caliper should then be used for six months. The opposite hip must be regarded with suspicion. slipping had recently occurred, replacement under anæsthesia and fixation in plaster were adopted by the author. In cases of some weeks' standing, subtrochanteric osteotomy, realignment of the neck and prevention of weight bearing were adopted.

Intraarterial Administration of Fluids in Shock.

D. B. KENDRICK, JUNIOR (Surgery, October, 1939) describes the results of work in which dogs suffering from experimentally produced shock were treated by the administration of glucose in saline solution by the intravenous route in one series and by the arterial route in a second series. The rate of injection was standardized. All the animals died. The efficacy of the methods of treatment was evaluated by a comparison of the survival periods, which were from one and a half to three times longer in the case of intravenous infusion. The author concludes that the intravenous route is preferable.

Knee Injuries in Athletics.

F. S. HOPKINS AND L. L. HUSTON (The New England Journal of Medicine, July 20, 1939) study the end-results in 193 out of 259 major injuries of the knee treated at Springfield College from 1924 to 1937. The time from the end of treatment to determination of end-result varied from one to thirteen years and averaged six and a half years. The apparently minor cartilage injuries were treated by the use of crutches, bandage and physiotherapy; in the more severe cartilage injuries the limbs were immobilized in a plaster cast, usually for four to six weeks, while in those cases that did not respond to conservative treatment the cartilage was excised. Of cases of simple synovitis, 89%, and of those with sprain of lateral ligament, 81%, showed good final results, and all patients were able to continue active

athletics. The time lost from physical exercise varied from 0 to 16 weeks, with an average of three weeks, and the time for complete recovery varied from one week to five years, with an average of 27 weeks. The results of semilunar cartilage injury treated by immobilization were so much better than the results obtained without immobilization that the former line of treatment should be instituted as soon as a diagnosis is made. The time lost from physical exercise varied from one to fourteen weeks, with an average of eight; the time for complete recovery varied from one to twenty-four months, with an average of five months. Among those patients operated upon the best results were obtained when operation was performed within one month of injury. The time lost from physical exercise was from one to thirty months, with an average of five months, nearly half the patients resuming physical practice within two months.

"Vitallium" in Internal Fixation of Fractures.

WILLIS C. CAMPBELL AND J. S. SPEED (Annals of Surgery, July, 1939) state that in certain types of fractures open reduction and the use of some means of internal fixation are the only procedures which offer the patient a reasonable expectation of satisfactory function. They quote the results in 65 cases, in which "Vitallium", a nonferrous alloy composed of cobalt, chromium and molybdenum, was employed in the form of plates or pothers as a material for screws, or both, as a material for internal fixation. They lay stress on the need for adequate skin preparation and operative technique to avoid wound contamination, and cite the advantages of "Vitallium" as compared with other materials. This substance has no electrolytic action and thus is not liable to corrosion; there is no absorption of bone about the screws, even in the presence of gross infection; and in some cases callus forms over the plate, which is sufficiently malle-able to bend slightly to fit the contour of the bone. The authors have used it in acute simple fractures, delayed union or malunion, ununited fractures, acute compound fractures and old infected compound fractures.

Papilloedema without Optic Neuritis.

Walter E. Dandy (Annals of Surgery. August, 1939) reports a series of 44 cases of papilloedema associated with headache and varying degrees of visual loss, but unaccompanied by intracranial tumour or increase of intracranial pressure. The cause is presumed to be largely of local origin; but its exact nature is uncertain. Thirty-one cases were followed up. The condition carries no danger to life, and heals spontaneously in a few weeks or months. Great defects of visual acuity and even blindness may disappear completely. No treatment appears to be effective.

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ANNUAL MEETING OF THE VICTORIAN BRANCH.

THE annual meeting of the Victorian Branch of the British Medical Association and of the Medical Society of Victoria was held at the Medical Society Hall, East Melbourne, on December 6, 1939, Dr. F. L. Davies, the President, in the chair.

ELECTION OF OFFICE-BEARERS AND MEMBERS OF THE COUNCIL.

The President announced that the council had elected the following office-bearers:

President: Dr. H. C. Colville.

Senior Vice-President: Dr. A. E. Coates.

Junior Vice-President: Dr. H. Boyd Graham.

Chairman of Council: Dr. H. C. Colville.

Honorary Treasurer: Dr. C. H. Mollison.

Honorary Secretary: Dr. Douglas Thomas.

Honorary Librarian: Dr. R. H. Fetherston.

The President announced that the following had been elected members of the Council by the general body of the members: Professor R. Marshall Allan, Dr. C. Byrne, Dr. H. C. Colville, Dr. J. Dale, Dr. D. M. Embelton, Dr. J. H. Gowland, Dr. John S. Green, Dr. M. Ö. Kent Hughes, Professor P. MacCallum, Dr. L. A. Neal, Dr. F. Kingsley Norris, Dr. D. Roseby, Dr. Kenneth Smith, Dr. Douglas Thomas.

The President announced that the following had been elected by the subdivisions: Dr. W. R. Angus, Dr. G. Winter Ashton, Dr. Annie L. Bennett, Dr. F. J. Bonnin, Dr. M. H. Box, Dr. J. A. Cahill, Dr. D. A. Carter, Dr. A. E. Coates, Dr. J. H. Downing, Dr. B. D. Fethers, Dr. P. Goodman, Dr. H. Boyd Graham, Dr. F. W. Grutzner, Dr. G. T. James, Dr. J. J. Kelly, Dr. D. C. Lear, Dr. A. E. Lincoln, Dr. R. O. Mills, Dr. J. Morlet, Dr. F. E. McAree, Dr. G. Raleigh Weigall, Dr. S. I. Weir, Dr. C. E. Willing, Dr. B. T. Zwar.

The President announced that Dr. E. L. Davies, Dr. R. H. Fetherston, Dr. C. H. Mollison and Dr. J. Newman Morris were the ex officio members of the council.

The representative of the Victorian Medical Women's Society was Dr. Eileen FitzGerald.

Dr. J. P. Major was elected a Director of the Australasian Medical Publishing Company, Limited.

ANNUAL REPORT OF THE COUNCIL.

The report of the council, which had been circulated among members, was taken as read, and adopted. The report is as follows.

The council of the Branch and the committee of the Society present the sixtieth annual report of the Branch and the eighty-fourth of the Society.

Election.

At the annual meeting held last December the following members of the council and of the committee were elected: Dr. G. W. Ashton, Dr. C. Byrne, Dr. H. C. Colville, Dr. John Dale, Dr. J. H. Downing, Dr. D. M. Embeiton, Dr. J. H. Gowland, Dr. John S. Green, Dr. M. O. Kent Hughes, Dr. L. A. Neal, Dr. F. Kingsley Norris, Dr. D. Roseby, Dr. Kenneth Smith, Dr. Douglas Thomas.

The following were elected to represent the subdivisions: Dr. W. R. Angus, Dr. M. H. Box, Dr. J. A. Cahill, Dr. A. E. Coates, Dr. P. Goodman, Dr. H. Boyd Graham, Dr. G. T. James, Dr. J. J. Kelly, Dr. P. C. Lear, Dr. C. M. Ley, Dr. F. E. McAree, Dr. J. F. Patrick, Dr. D. C. Pigdon. Dr. Keith C. Ross, Dr. Walter Summons, Dr. S. F. Sutherland, Dr. G. Raleigh Weigall, Dr. B. T. Zwar.

The council, under Rule 8, coopted Professor P. MacCallum and Dr. B. Milne Sutherland, and elected Dr. Eileen FitzGerald, nominated by the Victorian Medical Women's Society.

The following are ex officio members: The trustees of the Medical Society of Victoria (Dr. F. L. Davies, Dr. R. H. Fetherston, Dr. C. H. Mollison, Dr. J. Newman Morris) and the representative of the Australasian Medical Publishing Company (Dr. J. P. Major).

The council elected the following office-bearers:

President: Dr. F. L. Davies.

Vice-Presidents: Dr. H. C. Colville and Dr. A. E. Coates, Chairman of Council: Dr. H. C. Colville.

Honorary Secretary: Dr. F. Kingsley Norris. Honorary Treasurer: Dr. C. H. Mollison. Honorary Librarian: Dr. R. H. Fetherston.

The executive consisted of the President, with other office-bearers and the Immediate Past President, Dr. J. P. Major.

Dr. J. Newman Morris having resigned as a representative on the Federal Council and as Chairman of Council, which position he had occupied from its inception in 1922, the Branch Council resolved on January 25, 1939:

That this Branch Council places on record its appreciation of the capable, willing and self-sacrificing service rendered to the Branch by Dr. J. Newman Morris, particularly during the seventeen years he was Chairman of Council, the seventeen years he was a member of the executive, and the ten years he represented the Branch on the Federal Committee and subsequently the Federal Council, during the whole of which time he was Vice-President of the Federal Council also tenders to Dr. Morris its sincere thanks for the efficient and productive manner in which he discharged the responsibilities attaching to the offices he has just relinquished, and trusts that he may be inclined to devote the time now at his disposal through their relinquishment in other directions for the advancement of the profession, directions in which there is such scope and need for his outständing ability.

Attendances at Council Meetings.

Eleven ordinary meetings and nine special meetings of the council were held. The following shows the attendances:

Dr. M. H. Box 20	Dr. D. C. Lear 13
Dr. F. L. Davies 20	Dr. F. E. McAree 13
Dr. M. O. Kent Hughes . 20	Dr. Douglas Thomas 13
Dr. H. Boyd Graham 19	Dr. R. H. Fetherston 12
Dr. G. Raleigh Weigall . 19	Dr. J. Newman Morris. 12
Dr. A. E. Coates 18	Dr. D. C. Pigdon 11
Dr. H. C. Colville 18	Dr. P. Goodman 10
Dr. C. Byrne 17	Dr. C. H. Mollison 10
Dr. D. M. Embelton 17	Dr. J. P. Major 8
Dr. J. H. Gowland 17	Dr. B. T. Zwar 8
Dr. D. Roseby 17	Professor P. MacCallum 8
Dr. Walter Summons 17	Dr. John Dale 7
Dr. G. Winter Ashton 16	Dr. J. J. Kelly ² 6
Dr. L. A. Neal 16	Dr. K. C. Ross 6
Dr. F. Kingsley Norris 16	Dr. W. R. Angus ³ 5
Dr. Kenneth Smith 16	Dr. S. F. Sutherlanda 2
Dr. J. A. Cahill 15	Dr. S. I. Weir ¹ 2
Dr. Eileen FitzGerald . 15	Dr. G. T. James 1
Dr. J. H. Downing 14	Dr. Conrad Leys 1
Dr. John S. Green 14	Dr. J. F. Patricks 0
Dr. B. Milne Sutherland 14	

The highest attendance for any one meeting was 34, and the average attendance was 25.

¹ Appointed during the year.

³ Resigned during the year.

² Leave of absence granted during the year.

Appointment of Subcommittees.

The following subcommittees were appointed by the council (the first named acting as convener of that subcommittee):

Ethics: Dr. Major, Dr. Cahill, Dr. Fetherston, Dr. Morris, Dr. Pigdon, Dr. Zwar and executive.

Finance, House and Library: Dr. Mollison, Dr. Fetherston and Dr. Major.

Legislative: Dr. Green, Dr. Ashton, Dr. Coates, Dr. Colville, Dr. Dale, Dr. Davies, Dr. Gowland, Dr. Norris and Dr. Roseby.

Organization: Dr. Roseby, Dr. Ashton, Dr. Box, Dr. Byrne, Dr. Cahill, Dr. Dale, Dr. Downing, Dr. FitzGerald, Dr. Gowland, Dr. Graham, Dr. Green, Dr. Hughes, Dr. Lear, Dr. Major, Dr. McAree, Dr. Neal, Dr. Pigdon, Dr. Smith, Dr. Summons, Dr. Weigall, and representatives of country subdivisions.

Science: Dr. Coates, Dr. Downing, Dr. Graham, Dr. Hughes, Dr. Major, Dr. McAree, Dr. Norris, Dr. Thomas. Hospital: Dr. Graham, Dr. Byrne, Dr. Coates, Dr. Colville, Dr. Downing, Dr. Embelton, Dr. Goodman, Dr. Gowland, Dr. Hughes, Dr. Neal, Dr. Smith, Dr. Summons, Dr. Thomas and Dr. Weigall.

Correspondence: Dr. Colville and Dr. Norris. Social: Dr. Roseby, Dr. Ashton and Dr. McAree.

National Insurance: Dr. Gowland, Dr. Ashton, Dr. Byrne, Dr. Colville, Dr. Dale, Dr. Davies, Dr. Downing, Dr. Embelton, Dr. Green, Dr. Hughes, Dr. Neal, Dr. Roseby and Dr. Smith.

Workers' Compensation: Dr. Coates, Dr. Byrne, Dr. Graham, Dr. Hughes, Dr. Neal, Dr. Roseby and Dr. Smith.

Special Standing Committees.

Standing Insurance: Dr. Embelton, Dr. Davies, Dr. Hurley, Dr. Major, Dr. Mollison, Dr. McPhee.

Early Medical History: Dr. Black, Dr. Fetherston, Dr. Heffernan, Dr. Kenny, Dr. C. Macdonald, Dr. E. A. Mackay, Dr. Norris.

Yallourn: Dr. Davies, Dr. Major, Dr. Morris, Dr. A. Robertson, Dr. B. M. Sutherland, Dr. Gerald Weigall, Dr. Zwar, and Medical Secretary ex officio.

Child Welfare: Dr. Derham, Dr. Dale, Dr. Graham, Dr. Norris, Dr. Stephens.

Workers' Compensation Adjudication: Dr. Major, Sir A. Newton, Dr. Roseby.

Appointments and Nominations.

Trustees of the Medical Society of Victoria: Dr. Davies, Dr. Fetherston, Dr. Mollison and Dr. Morris.

Central Council, British Medical Association: Dr. Isaac Jones.

Annual Meeting, British Medical Association, Aberdeen, 1939: Representative, Victorian Branch, Major-General R. M. Downes; deputy representative and delegate, Dr. C. E. Sutherland; delegate, Dr. J. H. Bolton.

Federal Council: Dr. Colville and Dr. Davies.

British Medical Agency Company of Victoria Proprietary Limited: Directors, Dr. Mollison (chairman) and Dr. Fetherston; managing director, Mr. W. Ramsay.

British Medical Insurance Company of Victoria: Directors, Dr. Mollison (chairman), Dr. Fetherston, Dr. Hurley, Dr. Morris, Dr. Norris; Secretary, Mr. J. M. Ford. Victorian Correspondent, "The Medical Journal of Aus-

tralia": Dr. Graham.
Victorian Correspondent, "British Medical Journal": Dr.

Graham.

Victorian Bush Nursing Association: Dr. Graham and

Dr. B. M. Sutherland.

Hospital Benefits Association: Dr. Cahill, Dr. Dickson,
Dr. Norris, Dr. Roseby.

Medical Eye Service of Victoria: Dr. Gardner.

Ear, Nose and Throat Service of Victoria: Dr. G. W. Ashton.

The Advisory Committee to the Charities Board: Dr. Hurley, Dr. Embelton, Dr. Latham, Dr. Morris, Dr. McPhee, Dr. Zwar.

Electoral Board, Medical Staffing of Base Hospitals: Dr. Major and Dr. Norris.

Free Kindergarten Union: Dr. Gerald Weigall.

Victorian Baby Health Centres' Association: Dr. Graham.

Melbourne University Union — Graduates' Section (Formerly Melbourne University Association): Dr. Stephens.

Victorian Institute of Hospital Almoners: Dr. Morris. Lord Mayor's Fund: Dr. Morris.

Medical Advisory Committee, Education Department: Dr. Zwar.

Victorian Council for Mental Hygiene: Dr. Dale and Dr. Derham.

Melbourne Permanent Post-Graduate Committee: Dr. Coates, Dr. Major and Dr. B. M. Sutherland

Big Brother Movement: Dr. Gerald Weigall.

The Society for Health of Women and Children: Dr. B. L. Stanton.

Medical Officers' Relief Fund, Advisory Committee: Dr. Mollison, Dr. Davies and Dr. Upjohn.

Australian Aerial Medical Services: Dr. Morris.

Nurses' Board: Professor Allan, Dr. C. H. Hembrow.

Dietetic Association of Victoria: Dr. Dale. Society for Crippled Children: Dr. Norris.

Victorian Council for Social Training: Dr. Maudsley,

executive; Dr. Embelton, council.

Medical and Scientific Committee, Anti-Cancer Council

of Victoria: Dr. Hurley.

Board of Studies in Physical Education, Melbourne

University: Dr. Norris.

Opticians' Registration Board: Dr. E. L. Gault, Dr. Z. Schwartz.

City Electoral Roll: Dr. Mollison.

Masseurs' Registration Board: Dr. D. O. Brown and Dr. C. H. Hembrow.

Standards Association: Institutional Supplies Committee, Dr. C. Wallace Ross; Sectional Committee on Interior Illumination of Buildings, Dr. Mark Gardner.

National Safety Council of Australia: Professor W. A. Osborne.

Victorian Society for Crippled Children, Fourth World Conference of Workers for Cripples: Major-General R. M. Downes.

Tenth Australian Cancer Conference, Wellington, New Zealand (1939): Dr. S. V. Sewell.

State Medical Coordination Committee: Dr. T. E. V. Hurley and Dr. C. H. Dickson (Medical Secretary).

Branch Convocation.

The following were elected for the year 1939:

Central: Sir J. Barrett, Dr. L. B. Cox, Dr. S. O. Cowen, Dr. K. D. Fairley, Dr. W. A. Hailes, Dr. J. G. Hayden, Dr. K. Hiller, Dr. W. E. A. Hughes-Jones, Dr. G. R. A. Syme, Dr. M. D. Silberberg, Dr. H. C. Trumble.

Northern Suburbs: Dr. E. R. Cordner, Dr. L. A. Neal, Dr. C. E. Watson.

North-Eastern Suburbs: Dr. W. Ostermeyer, Dr. M. Ashkenasy.

Eastern Suburbs: Dr. W. L. Carrington, Dr. R. W. Fisher, Dr. R. L. Forsyth, Dr. E. M. Inglis.

South-Eastern Suburbs: Dr. B. Fethers, Dr. G. E. Foreman, Dr. W. McLaren, Dr. R. M. Shaw, Dr. W. E. Tulloh.

South Central Suburbs: Dr. H. Grover, Dr. R. D. Aitchison.

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Southern Suburbs: Dr. A. J. Carroll, Dr. S. G. L. Catchlove, Dr. W. H. Fitchett.

Western Suburbs: Dr. M. O. Kent Hughes, Dr. H. I. Robinson.

Geelong: Dr. R. L. Fulton, Dr. R. G. McPhee.

South-Western Country: Dr. E. C. Varley, Dr. J. Morlet. Ballarat: Dr. N. A. Longden, Dr. C. E. Richardson.

Goulburn: Dr. F. W. Grutzner.

Bendigo: Dr. A. A. Crooks, Dr. W. R. Groves, Dr. E. Sandner.

North-Eastern Country: Dr. D. D. Browne.

Gippsland: Dr. G. A. Hagenauer, Dr. P. V. Langmore. North-Western Country: Dr. G. R. Felstead, Dr. F. C. De Crespigny

No meeting of convocation was held.

Membership Roll.

The number of members on the roll is 1,439, which is nine more than that of last year. Ninety names were added (63 by election, 7 who paid arrears, and 20 by transfer into the Branch); 81 names were removed (27 by death, 8 by resignation, 20 by transfer out of the Branch, and 26 who allowed their subscriptions to fall into arrears).

The names of two associates have been removed by death, and three have been added. Honorary associates number 33.

Honorary student associates number four.

The death of the following members and associates is recorded with regret: Dr. R. C. Alexander, Dr. A. B. Campbell, Dr. Stephen H. Cooke, Dr. Arthur F. Davenport, Dr. W. N. Davies, Dr. A. Degenhardt, Dr. T. Taylor Downie, Dr. G. Orr Ewing, Dr. A. J. Fargie, Dr. Stewart W. Ferguson, Dr. J. Morrison Gardiner, Dr. F. J. Gawne, Dr. Jane S. Greig, Dr. Jas. A. Harbison, Dr. J. B. Hay, Dr. A. S. Joske, Dr. C. M. Krizos, Dr. Henry Laurie, Dr. W. Spalding Laurie, Dr. Arthur D. Mawson, Dr. K. A. McCarthy, Dr. Donald McLean, Dr. Thos. Murphy, Dr. J. Scott Paton, Dr. J. H. Pestell, Dr. Edward Ryan, Dr. A. H. Sturdee, Dr. H. H. Vogler, Dr. A. E. Taylor.

Ethics Subcommittee.

The subcommittee met ten times, and the following were the attendances:

Dr	Major .						10	Dr.	Coates
	Cahill								Morris
Dr.	Colville			 			8	Dr.	Zwar
Dr.	Davies						8	Dr.	Sutherland
Dr.	Norris			 			8	Dr.	Mollison
Dr.	Pigdon						6		

In response to an inquiry, a member was advised that the radiological examination of patients under the care of masseurs and chiropodists is inadvisable and not approved.

An expression of opinion from the Western Australian Branch that disclosure of the nature of an illness of a government servant by statement in a certificate which ultimately reached a lay departmental head, was a breach of professional confidence, was not agreed with. Such a certificate is supplied to the patient and what he does with it is his own affair.

As the rules of the Branch provide that "No member engaged in medical practice, or who holds a salaried position by virtue of a medical or surgical qualification, shall sanction the quotation of any extract from any publication by him dealing with any medical or surgical subject for the purpose of a trade advertisement", a member was refused permission to allow a firm of wholesale druggists to issue reprints of an article appearing in a professional journal in which one of their products was mentioned.

Associated Medical Services, Limited, and the Federated Mutual Medical Benefit Society have been declared to be institutions detrimental to the interests of the medical profession by a general meeting of the Branch.

The Australian Red Cross Society has been added to those bodies to which lectures may be given by members without special permission of the Branch council.

Organization Subcommittee.

The subcommittee met twelve times, and the following were the attendances:

Dr.	Roseby	12	Dr. Byrne 6
Dr.	Cahill	11	Dr. Dale 6
Dr.	Ashton	10	Dr. McAree 6
Dr.	Hughes	10	Dr. Neal 6
	Weigall		Dr. Summons 6
	Box		Dr. Sutherland 6
	Graham		Dr. Downing 4
	Lear		Dr. Green 3
	Smith		Dr. Major 0
	Fitzgerald		Dr. Pigdon 0
	Gowland		

The most important matter concerning the subcommittee during the year has been the drafting of a new lodge agreement which involved much work and many meetings. As the Federal Council desires to establish uniformity in friendly society practice throughout the Commonwealth the contract practice subcommittee of that body has been asked to draw up a model lodge agreement, and pending its completion no action has been taken to present the Victorian agreement to the friendly societies.

Members have been asked to advise the Branch office of the names of any candidates for lodge membership whose incomes exceed the limits set out in the Wasley Award. The grand lodges are prepared to debar such candidates, but strict enforcement of the income limit provisions can be obtained only by the cooperation of every member of the Branch.

A policy in relation to suburban out-patient dispensaries has been formulated and was published in The Medical Journal of Australia, April 15, 1939, at page 598.

Agreement was reached with the Melbourne District Nursing Society, under which practitioners called to obstetrical emergencies will be remunerated.

A policy governing the conditions of employment of assistants in general practice has been established and was published in The Medical Journal of Australia, November 4, 1939, at page 701.

As a result of conferences with the Public Health Commission and the Municipal Association agreement on the rates of remuneration of medical officers of health will probably be reached, and the successful conclusion of the negotiations should result in the removal of many of the existing anomalies.

Despite further representations, the State Ministry has refused to restore the salaries of medical officers attending children under the care of the Children's Welfare Department, which were reduced under the Financial Emergency Act.

Legislative Subcommittee.

The subcommittee met six times, and the following were the attendances.

Dr.	Green	 4	Dr. Gowland 4	
Dr.	Norris	 6	Dr. Colville 4	
Dr.	Ashton	 5	Dr. Dale 3	
Dr.	Davies	 5	Dr. Coates 1	
Dr.	Roseby	 5		

The question of the organization of the profession in Australia has been under consideration during the year, but no finality has been reached in the matter.

The rules of the Branch have been altered to provide for the appointment of substitute and deputy representatives to act for representatives of country subdivisions unable to attend council meetings.

Hospital Subcommittee.

The subcommittee met nine times, and the following were the attendances:

Dr.	Graham	ı							9	Dr.	Downing					5
Dr.	Hughes								9	Dr.	Summons					- 5
Dr.	Coates			'n				,	7	Dr.	Neal					4
Dr.	Colville								7	Dr.	Embelton					1
Dr.	Weigall								7	Dr.	Thomas					1
Dr.	Byrne								6	Dr.	Goodman					0
Dr.	Smith								6	Dr.	Gowland .					0

The subcommittee devoted a great deal of time during the year to the problem of the removal of workers' compensation cases from public hospitals, but owing to circumstances beyond its control was unable to arrive at a satisfactory solution.

The Charities Board has been requested to establish a central bureau for arranging the admission of patients to public hospitals.

In view of the increasing number of road accidents and their effect on public hospitals and the community, it was decided to support the work of the National Safety Council and seek representation on its executive, the outcome being that Emeritus Professor Osborne now represents the Branch on that body.

The opinions of honorary staffs throughout the State having been sought on the proposal of the Charities Board to establish "sub-intermediate" or "service bed" accommodation in public hospitals, it was decided not to agree to the proposal.

Following a conference with the Charities Board, a scale of payments of honoraria to honorary medical officers of country hospitals of less than fifty beds has been passed by the council and transmitted to the board.

A hospital policy for the State, embodying a compulsory contributory scheme, as an alternative to a hospital tax, was presented to the Honourable the Premier by a deputation from the Branch council, but although the Premier expressed interest in the proposals, the income tax rates are to be increased to finance the public hospitals.

Finance, House and Library Subcommittee.

The subcommittee met eleven times, and the following were the attendances:

Dr.	Fethersto)1	1								
Dr.	Mafor .										1
Dr.	Mollison										

The Honorary Treasurer's report and statement of receipts and expenditure of the Branch and the Medical Society of Victoria will be presented to the monthly Branch meeting in February.

The comfort of members using the library during the winter months was greatly enhanced by the installation of a second gas heater. The thanks of members are due to the British Medical Insurance Company, which bore

the cost of the heater and its fixing.

The British Medical Insurance Company also made a sum of £1,000 available to enable debentures to that amount, bearing interest at 5% per annum, to be paid off. These have been transferred to the insurance company and in future will bear interest at the rate of 1%.

The financial position of the Branch has been given careful consideration. An increase in the rates of subscription is unavoidable if solvency is to be maintained. During the year the capitation fee due to the Federal Council has been increased from 2s. to 6s. per member, alone involving an increased annual expenditure of approximately £290. Before this report goes to print a statement will be presented to the council dealing fully with the financial position together with a recommendation for meeting the situation.

The following gifts are acknowledged, for which the council's thanks on behalf of members have already been made to donors: Sir James Barrett, original and copy of his father's indenture of apprenticeship; Dr. Rowden White, portraits of past medical congresses; Dr. J. A. Cahill, early anæsthetic mask.

Honorary Librarian's Report.

The library continues to be well patronized, and the increased demand for books, previously noted, continues.

The second heating unit installed during the year has added to the comfort of members reading in the library.

From time to time requests are made for photostatic copies of articles not only by our own members but by members of the Association residing in distant States. It is a pleasure to be able to comply with the requests, which can now be done at a nominal cost.

Thanks are tendered to the members of the Library Subcommittee for reviewing books and publications; to the directors of the British Medical Insurance Company for their continued and generous donations to the library funds, which has enabled almost all of the recommendations made by the library committee to be purchased.

The work of the assistant librarian and library clerk has increased during the past few years. Their help and assistance in finding references, always willingly rendered, are greatly appreciated.

Presentations of books and journals have been made during the year by the following, to whom our thanks were tendered: Association of American Physicians, Philadelphia; College of Physicians, Philadelphia; Commonwealth Statistician; Dental Congress (9th Australian); Editor, The Medical Journal of Australia, Henry Phipps Institute; Medico-legal Society of Victoria; Dr. Archie Anderson; Dr. M. Crivelli; the late Dr. Stewart Ferguson; Dr. Selby Link; Dr. R. W. Nicholls; the late Dr. Edward Ryan; Dr. Guy Springthorpe; Dr. W. G. D. Upjohn; Dr. R. R. Wettenhall; Sir Alfred Webb-Johnson.

Science Subcommittee.

The science subcommittee met on three occasions. The following were the attendances:

Dr.	Coates							3	Dr.	Major .							1
Dr.	Norris	,						3	Dr.	Downing							0
Dr.	Graham							2	Dr.	McAree							0
Dr.	Hughes							1	Dr.	Thomas	٦,			,			0

The syllabus of scientific meetings for the year consisted of ten monthly meetings, three country Branch meetings, seven clinical meetings.

The following were the lecturers and the subjects dealt with:

Monthly Meetings.

February.—Dr. Clive Fitts: "Misapplication of Science to the Practice of Medicine."

March.—Dr. J. Erskine Sewell: "Diagnostic Methods in Gastric Diseases."

April.—Dr. C. Wallace Ross: "The Application in Diagnosis and Treatment of some Recent Views on Carbohydrate Metabolism."

May.—Dr. Byron L. Stanton: "Some Problems in Every-day Prescribing."

June.—Dr. J. P. Major: "An Address on the Constitution, Organization and Activities of the Victorian Branch of the British Medical Association."

July.—Dr. T. E. Lowe and Dr. G. Penington: "Coronary Occlusion."

August.—Dr. J. K. Adey: "Mental Diseases in Relation to General Practice."

September.—Dr. F. Kingsley Norris: "The Opportunities of the Army Medical Officer in the Field: An Historical Review of the Influence of Epidemics in Campaigns of the Past."

October.—Dr. L. S. Latham: Sixth Sir Richard Stawell Oration, "Some Backgrounds in Medicine".

November.—Dr. Eric L. Cooper: "The Place of the Medical Man in the Preparation of the Army for War."

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Clinical Meetings.

April.—Women's Hospital.

May.—Royal Melbourne Hospital.

June.—Eye and Ear Hospital.

July.—Alfred Hospital.

August.—Children's Hospital.

September.—Saint Vincent's Hospital.

November.—Austin Hospital.

Branch Meetings in the Country.

May 6 (at Warrnambool, South Western Subdivision).— Clinical meeting at Warrnambool Hospital. Dr. Irving Buzzard (Warrnambool): "Pre-eclamptic Toxæmia."

July 15 (at Bendigo, Bendigo Subdivision).—Clinical meeting at Bendigo Hospital. Dr. F. J. Colahan and Dr. A. W. Medwyn Hutson (Melbourne): "Surgical Methods in the Treatment of Pulmonary Tuberculosis."

October 14 (at Yallourn, Gippsland Subdivision).—Clinical meeting at Yallourn Hospital. Dr. Geoffrey Penington (Melbourne): "The Use of the Sulphanilamides in Bacterial Infections."

The Stawell Oration.

The Sixth Sir Richard Stawell Oration was delivered by Dr. L. S. Latham on October 4, the subject being "Some Backgrounds in Medicine."

Workers' Compensation Subcommittee.

The following are the members of the subcommittee: Dr. A. E. Coates, Dr. C. Byrne, Dr. H. Boyd Graham, Dr. M. O. Kent Hughes, Dr. L. A. Neal, Dr. D. Roseby, Dr. K. Smith.

Until recently matters pertaining to workers' compensation legislation had been dealt with by existing subcommittees, particularly hospital and organization, but a Workers' Compensation Subcommittee has been established which will in future deal with aspects of workers' compensation affecting members.

A schedule of fees for services rendered to injured workers has been drawn up and approved by the Branch council and will be the subject of a conference with the Accident Underwriters' Association.

Prior to the establishment of this subcommittee, council approved of the issue of a printed slip, copies of which may be purchased for 7s. 6d. per 1,000, informing patients of the benefits provided under the compensation acts.

National Insurance Subcommittee.

The subcommittee met seven times, and the following were the attendances:

were the attenuances.		
Dr. J. H. Gowland	7	Dr. John Green 4
Dr. G. W. Ashton	6	Dr. D. Roseby 4
Dr. F. L. Davies	6	Dr. Kenneth Smith 4
Dr. M. O. Kent Hughes	6	Dr. C. Byrne 3
Dr. L. A. Neal	6	Dr. J. H. Downing 3
Dr. F. K. Norris	5	Dr. D. M. Embelton 3
Dr. John Dale	4	Dr. H. C. Colville 2

The principal business with which the subcommittee engaged itself was the preparation of a statement setting out the views and enunciating a policy of the Branch in regard to an acceptable national health service under national insurance. The statement was printed in brochure form and circulated to members on February 28, 1939. The principles elaborated in the statement were forwarded to the Federal Council with the Branch council's recommendation for adoption.

A contract practice subcommittee was set up by the Federal Council. The subcommittee consists of one representative from each State. In compliance with a request from the Federal Council the Branch council appointed the Medical Secretary (Dr. Dickson) the Victorian representative on the subcommittee.

A national insurance advisory subcommittee consisting of Dr. Byrne, Dr. Cahill, Dr. Davies, Dr. Gowland, Dr.

Graham, Dr. Roseby and Dr. Thomas was appointed to advise Dr. Dickson. The committee met once for the purpose of giving guidance in the attitude the Medical Secretary should adopt at a conference between the Honorary Minister for Social Services (Sir Frederick Stewart) and members of the Federal Contract Subcommittee held in Melbourne on May 17. In view of the international situation national insurance for the time being is in abeyance.

Insurance Adjudication Committee.

The committee (Dr. J. P. Major, Sir Alan Newton and Dr. D. Roseby) has since its inception in December, 1937, dealt with thirty cases of disputed accounts for services rendered to claimants under the Workers' Compensation

Although the value of the committee has to some extent been restricted by its existing terms of reference, which the council has been asked to widen, its decisions have assisted in maintaining amicable relations between the medical profession and the underwriters.

Victorian Branch News.

During the year the publication has been continued in The Medical Journal of Australia of items of interest to members under the caption "Victorian Branch News".

War Emergency Organization.

The council has evolved a scheme for the protection of the interests of members engaged on national service during the war. It is in two parts, the first being an income insurance fund, to which contributions based on a percentage of gross incomes are invited and which will be used to assist financially those who are on service. The second part of the scheme is complementary to the first and aims at the maintenance of absentees' practices by the formation of groups organized in the subdivisions. The success of the scheme will depend on the cooperation of all members.

Social.

Golf.—The play-off for the championship of 1938 was won by Dr. H. R. Hyett.

The Sixth Annual Golf Tournament was held on the Royal Melbourne Golf Links on October 18, 1939. There were 55 entrants. The championship (the Weigall Cup) was won by Dr. John Gray, with Dr. J. C. Lewis as runner-up. The Handicap event (the Roseby Cup) was won by Dr. H. W. Lording, with Dr. L. E. Hurley as runner-up.

Cricket.—Matches were played and won against a Defence Department team and a South Melbourne Cricket Club team.

Congratulations.

During the year under review council had pleasure in conveying congratulations to: Dr. F. V. G. Scholes, C.M.G., Dr. J. L. Thompson, C.B.E., and Sir John Ramsay, K.B., on their inclusion in the New Year's Honours List; the late Dr. A. S. Joske, O.B.E., on his inclusion in the King's Birthday Honours List; Dr. F. M. Burnet and Dr. E. H. Derrick on winning Cilento Medals for work on Queensland fevers; Dr. Edgar King on winning the Jacksonian Prize for the third time; Sir Charles Bickerton Blackburn, O.B.E., and Dr. S. V. Sewell on being elected Fellows of the Royal College of Physicians; Dr. C. H. Mollison on his appointment as President of the Medical Board of Victoria; Dr. F. K. Norris on his appointment as a member of the Medical Board of Victoria.

Australasian Medical Congress.

As Australia is at war, the Sixth Australasian Medical Congress (British Medical Association), which was due to be held in Perth in September, 1940, has been postponed indefinitely.

Federal Council.

The Federal Council met in Melbourne in March, 1939, and in Sydney in December, 1938, and September, 1939. Full reports of the proceedings appeared in The Medical Journal of Australia of February 4, 1939, page 202, April 22, 1939, page 628, and September 30, 1939, page 520.

The Branch council entertained members of the Federal Council and the Federal National Insurance Committee at supper during the March meeting.

The E. H. Embley Prize Medal.

The examination for the sixth award was held in December, 1938, and the gold medal was presented at the annual meeting to the winner, Dr. Robert Wall.

The Victorian Medical Benevolent Association.

My association again thanks its many supporters among the members of the British Medical Association, numbering 644, who added to their annual subscription the sum of five shillings or more, which made them also members of the Victorian Medical Benevolent Association.

It is hoped that this number may be increased from year to year until all participate in the gracious work.

During the past year nine persons have received allowances varying from one to three pounds a week. No case of need has been refused. A member who remembered gratefully the help he had received in his student days from one of his medical teachers made a donation of £50, to be applied to the relief of his benefactor's daughter. She was already receiving £1 per week from the association, and this grant has now been doubled. My association welcomes the opportunity to act as almoner in such circumstances.

EDWARD L. GAULT.

Honorary Secretary.

British Medical Agency, Proprietary, Limited.

The arranging of *locum tenens* and general agency work permitted the company successfully to conclude its year and show a profit on its operations.

C. H. Mollison,

Chairman of Directors.

British Medical Insurance Company of Victoria, Limited.

The British Medical Insurance Company of Victoria, Limited, earned a net profit of £1,786 for its last financial year, ended April 30 last. During the year donations were made to:

The Medical Society of Victoria-

For library books £117 6 7 In cash 591 5 0

Melbourne Permanent Post-Graduate Committee ... 100 0 0
The Victorian Medical Benevolent Association 5 5 0

It had been the practice of the directors to invest undistributed profits in Australian Government loans, but for some years now the company has been taking up debentures in the Medical Society of Victoria whenever they become available. The company's holding of these debentures at the date of the last balance sheet was \$1,225\$, and it has accepted interest at the rate of 1% per annum, instead of 5% ordinarily payable.

Recently the directors informed the Medical Society that they would be prepared to advance £1,000 this year for the purpose of taking up more debentures, and it was hoped that a similar amount could be advanced each year until the whole of the debentures were redeemed. The Medical Society would thus derive further substantial benefit by way of the reduction in the interest bill.

The company again showed a satisfactory increase in business, the premiums this year being £12,399, which is £833 greater than for the previous year. It is gratifying to see that members are transferring more and more of

their fire and general insurances to the company. This business is more profitable than the insurance of motor cars, and it is hoped that members will continue to support the company as much as they possibly can.

C. H. MOLLISON,

Chairman of Directors.

Report of Subdivisions.

Metropolitan.

Central.—Dr. A. E. Coates, Dr. H. Boyd Graham and Dr. B. T. Zwar have represented the Central Subdivision on the British Medical Association Council this year. Dr. J. P. Major became a director of the Australasian Medical Publishing Company and by virtue of that office is also a member of the council. He is the chairman of the Central Subdivision, and Dr. Graham is the Honorary Secretary.

A meeting of the subdivision was held on December 22, 1938, at which a discussion of Britt. Medical Association affairs affecting the members of the subdivision took place. Two resolutions were carried: (1) "That in the opinion of the meeting medical benefits under the National Health Insurance Act should be brought under the control of a health commission and should be divorced from the control of the National Insurance Commission"; (2) "That the meeting recommended that the Branch council should take such steps as it deemed necessary to prevent the recurrence of an anonymous circular before an election."

During the year 40% of the members of the subdivision signed the undertaking concerning service under the National Health and Pensions Insurance Act as distributed by the General Secretary of the Federal Council.

H. BOYD GRAHAM,

Honorary Secretary.

Western Suburbs.—A meeting was held at the residence of Dr. M. H. Box on Thursday evening, January 26, 1939. The following members were present: Dr. Kent Hughes, Dr. Gowland, Dr. Dorman, Dr. McDermott, Dr. J. E. Byrne, Dr. Ross, Dr. Rabinov, Dr. Dungan, Dr. Robinson, Dr. Joel, Dr. Ham, Dr. Box. Apologies were received from Dr. Guthridge and Dr. Nish. Dr. M. H. Box was in the chair.

After speeches by Dr. Gowland and Dr. Kent Hughes, acquainting members of the necessity of signing the pledge in relation to the *National Health Insurance Act*, a motion, moved by Dr. Kent Hughes and seconded by Dr. Dungan, "That this subdivision approves of the principle of signing the pledge", was carried unanimously.

M. J. COSTELLOE,

Honorary Secretary.

South Central Suburbs.—Two meetings of the South Central Suburban Subdivision were held during the current year.

At a meeting held on September 15, 1939, it was decided to help in every way possible to conserve the interests of any of the members who may be called up for military service.

Members also attended a meeting called by the Mayor of South Melbourne to arrange for the formation of a Red Cross unit and for the staffing of first-aid posts in the district in time of emergency.

The South Melbourne Council was assured of the cooperation and assistance of the members of the South Central Subdivision.

F. E. McAree,

Honorary Secretary.

Country.

South Western Country.—The annual meeting of the South Western District Subdivision was held at Warrnambool on August 6, 1938.

The following office-bearers were elected: President, Dr. Irving Buzzard; Vice-Presidents, Dr. J. LeM. Kneebone and Dr. A. A. Weir; Committee, Dr. Westacott, Dr. O'Donnell, Dr. Francis, Dr. Watson, Dr. Fitzpatrick and Dr. McInnes.

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edical ue to poned This meeting also took the form of a clinical meeting, and Dr. L. E. Hurley delivered a lecture on "Medical Topics of Interest to General Practitioners".

Four meetings were held during the year. The second meeting was at Port Fairy on November 5, 1938, when Dr. E. Hughes-Jones spoke on "Carcinoma of the Large Bowel".

At Mortlake on February 18, 1939, Dr. A. M. Hill spoke on "Uterine Inertia", and at Camperdown on August 12, 1939, Mr. Brian Keon-Cohen spoke on "Fractures". The average attendance at these meetings was 13.

During May, 1939, a meeting of the Victorian Branch of the British Medical Association was held at Warrnambool. This meeting was highly successful, being well attended by both country and city members. Dr. A. E. Coates, of Melbourne, opened a discussion on "Head Injuries", and Dr. Irving Buzzard read a paper on "Preeclamptic Toxemia".

During the year Dr. Patrick resigned his appointment as council representative and Dr. Stewart Weir was appointed to the position.

EDWARD BANNON,

Honorary Secretary.

Bendigo.—Office-bearers: President, Dr. H. E. Robinson; Vice-President, Dr. M. Jacobs; Immediate Past President, Dr. E. Sandner; Executive, Dr. H. R. Catford, Dr. W. E. Harrison, Dr. P. Goodman and Dr. J. L. W. Sharland; Council Representative, Dr. P. Goodman; Members of Convocation, Dr. Crooks, Dr. Groves and Dr. Sandner; Honorary Secretary-Treasurer, Dr. E. W. Turner.

In the earlier part of the year there was a good deal of activity among members directed towards safeguarding the interests of the profession in the event of a national health insurance scheme being put into operation.

After discussions and negotiations with the board of the Bendigo Base Hospital, an agreement was reached covering the treatment of cases coming under the Workers' Compensation Act. The scheme contained in this agreement was adopted by the Branch council as a basis for its recommended policy.

Several matters concerning ethical conduct of members were referred to the Branch council.

The executive committee acted as an organizing committee to secure signatures to the national health insurance pledge, and to secure donations to the national health insurance emergency fund, every member of the subdivision was communicated with, either personally or by letter.

The board of the Bendigo Base Hospital proposed several schemes for the establishment of a sub-intermediate class of patients at the hospital. After discussion by members of the subdivision and reference to the Branch council, these schemes were rejected in turn.

Our representative introduced a motion into the council to have voting power granted to a member attending a council meeting as a substitute representative. After amendment the proposal was adopted.

A northern section of the Bendigo Subdivision was formed during the year. It comprises members of the British Medical Association resident in Swan Hill, Kerang, Boort and other Mallee towns, and Balranald (New South Wales). Dr. Weaver, of Swan Hill, is the first president, and Dr. Barrett, of Kerang, the honorary secretary. Meetings are held alternatively at Kerang and Swan Hill, and their objects are clinical discussions and fellowship. The first meeting, held at Kerang in July, was a great success; about ten Bendigo practitioners made the trip.

A Branch meeting was held on July 15. Cases were presented and discussed in the afternoon at the base hospital. After a dinner at the Shamrock Hotel, addresses on the surgical treatment of pulmonary tuberculosis were delivered by Dr. F. J. Colahan and Dr. A. W. Medwyn Husson

E. W. TURNER,

Honorary Secretary.

North-Eastern Country.—The annual meeting called for the afternoon of September 9 lapsed owing to poor attendance. In the evening Dr. C. H. Hembrow gave an instructive lecture on "Manipulative Surgery", with a film demonstrating procedures. The lecture was greatly appreciated by those present.

E. W. HANDS.

Honorary Secretary.

Goulburn.—Two meetings have been held since the last annual meeting: (1) a clinical meeting at the Mooroopna Base Hospital, at which cases were shown by members of the honorary medical staff of the hospital; (2) the annual meeting, held on October 18, 1939, at which the following office-bearers were elected: President, Dr. A. L. Bennett (Mooroopna); Vice-President, Dr. J. A. Kennedy (Shepparton); Honorary Secretary, Dr. H Smith (Tatura); Committee, Dr. F. W. Grutzner (Shepparton) and Dr. R. O. Mills (Shepparton); Representative on Advisory Board of Mooroopna Base Hospital, Dr. F. W. Grutzner; Representative on Convocation, Dr. F. W. Grutzner; Representative on Shepparton-Mooroopna and District Ambulance, Dr. J. A. Kennedy.

H. SMITH, Honorary Secretary.

North-Western Country.—A meeting of the North-Western Country Subdivision was held at Horsham on November 26, 1938. The following officers were elected: President, Dr. G. R. Felstead; Council Representative, Dr. W. R. Angus; Honorary Secretary, Dr. G. Forsyth. There was a general discussion at this meeting on the terms of national health insurance.

G. FORSYTH, Honorary Secretary.

Ballarat.—The following are the office-bearers of the Ballarat Subdivision for 1939: President, Dr. G. R. Davidson; Vice-President, Dr. J. C. Douglas; Honorary Treasurer, Dr. W. A. Spring; Honorary Secretary, Dr. C. E. Richardson; Council Representative, Dr. G. T. James. During the year the subdivision has held many successful meetings, the clinical society, with Dr. Douglas as president, being particularly active.

C. E. RICHARDSON,

Honorary Secretary.

Geelong.—Three quarterly, one special and three clinical meetings were held: (1) Dr. R. Warden, "Endocrines in Gynæcology"; (2) Dr. John Turner, "Surgery of Common Rectal Conditions"; (3) Dr. C. Adey, "Treatment of Gas and other War Injuries".

Business considered during the year included recommendations concerning the site and lay-out of a new infectious diseases hospital, payment of contributions to the national insurance emergency fund, workers' compensation and first-aid lectures. There has been considerable activity in the purchase of library books and furnishing of the library. Special meetings were held to consider methods of protecting the practices of members engaged in war service.

office-bearers: Chairman, Dr. W. H. Long; Past Chairman, Dr. H. R. Hyett; Vice-Chairman, Dr. K. McK. Doig; Committee, Dr. Purnell, Dr. Langlands and Dr. Carter; Council Representative, Dr. K. C. Ross; Representative on Advisory Board of Geelong Hospital, Dr. G. R. Darby.

CHAS. GALE,

Honorary Secretary.

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Reports of Sections.

Anæsthesia.—During the past year three meetings of the section have been held, with an average attendance of nine members. Dr. Kaye and Dr. V. Hurley delivered addresses. The section has 23 members and the financial position is sound.

Office-bearers: President, Dr. R. Howden; Honorary Secretary and Treasurer, Dr. Ian C. James.

IAN C. JAMES.

Honorary Secretary.

Ear, Nose and Throat.—Four meetings of the section were held during the year. Dr. F. P. Morgan contributed by invitation a lecture upon the "Surgery of Brain Abscess".

Office-bearers: President, Dr. Noel Box; Vice-President, Dr. Thomas Millar; Treasurer, Dr. Cecil Cantor; Committee, Dr. Leonard Johnston, Dr. Heyworth Watson, Dr. Noel Puckle.

ERIC GUTTERIDGE,
Honorary Secretary.

Obstetrics and Gynæcology.—There were four meetings of the section held during the past year, all of which were well attended. The section has 40 financial members.

Office-bearers: President, Dr. R. Fowler; Honorary Secretary and Treasurer, Dr. G. B. Bearham.

G. B. BEARHAM,

Honorary Secretary.

Neurology and Psychiatry.—A clinical meeting was held at the Mental Hospital, Royal Park, on May 11, 1939. There was an excellent attendance of 36 members and the hospital staff. The president, Dr. Maudsley, was in the chair. The evening was opened by a discussion of cases of unusual interest, presented by the staff of Royal Park. Another meeting was held on May 29, 1939, at the Medical Society Hall, at which Dr. Anita Mühl delivered a paper on "The Emotional Factors in General Medicine". This meeting was also well attended and Dr. M. D. Silberberg opened the discussion. A special committee was formed to investigate the possibility of founding an institute for psychoanalysis. This arose from an offer made by Miss Lorna Traill to subscribe £5,000 for the formation of such an institute. Further meetings on this subject have yet to be held. There are 14 financial members of the section, and at the two meetings held this year a large number of general practitioners availed themselves of the section's invitation to attend.

REG. S. ELLERY, Honorary Secretary.

Radiology.—The meetings during this year have covered a wide range of subjects of interest to radiologists. Dr. Eddy, of the Commonwealth Institute, gave a most instructive lecture-demonstration on recent ideas and advancements in Röntgenology. Another meeting concerning recent advances was held to discuss instrumental methods of diagnosis of cardiac and aortic affections. Dr. D. Thomas and Dr. L. Rothstadt delivered addresses on the value of the X rays (including kymography) and electrocardiography. An address and demonstration were given by Dr. Frank Morgan on methods of investigation in cerebral lesions. Professor Schuller, a world-renowned authority from Vienna, was heard with great interest during the discussion.

KEITH HALLAM, Honorary Secretary.

Ophthalmological Society (Victorian Branch).—During the year 1939 the first scientific meeting of the Ophthalmological Society of Australia (British Medical Association) was held in Melbourne. There was a large attendance of members from other States, and the chief guests were Dr. Ida Mann, of London, and Dr. Aaron Green, of San Francisco. The Ophthalmological Society is a Federal body which coordinates the activities of the various State sections. The Victorian section has held its usual scientific meetings. Dr. Mark Gardner is the president for 1939.

T. A'B. TRAVERS, Honorary Secretary.

Contract Practitioners' Group.—The group has been formed to discuss and consider any aspect of contract practice. Membership of the group is open to anyone who is doing contract practice work, on the payment of a subscription of 10s. Membership for the past year totalled 345. The inaugural meeting was held on November 10, 1938, and was well attended by both city and country practitioners. A constitution was adopted, a committee elected, and national health insurance discussed.

The following were elected members of the 1938-1939 committee: Chairman, Dr. J. H. Gowland; Honorary Secretary, Dr. M. O. Kent Hughes; Honorary Treasurer, Dr. K. Rush; Committee, Dr. G. Ashton, Dr. C. Byrne, Dr. L. A. Neal, Dr. R. M. Shaw (metropolitan), Dr. J. H. Downing, Dr. A. E. Lincoln, Dr. K. F. O'Donnell, Dr. D. A. Carter, Dr. E. A. Guymer (country). The committee has met seven times during the year. All meetings were well attended. One special meeting was held on February 24. There was a fair attendance, and the pledge, the national insurance service and the lodge agreement were discussed. Four circulars and a full annual report and balance sheet were circulated to members.

The first annual meeting, held on Wednesday, October 18, 1939, was followed by an interesting address on "Medical Service in War", given by Lieutenant-Colonel F. Kingsley Norris, D.A.D.M.S., Second Cavalry Division.

The following committee was elected for 1939-1940: Chairman, Dr. J. H. Gowland; Honorary Secretary, Dr. R. M. Shaw; Honorary Treasurer, Dr. K. Rush; Committee, Dr. G. Ashton, Dr. B. D. Fethers, Dr. M. O. Kent Hughes, Dr. L. A. Neal, Dr. D. Roseby (metropolitan), Dr. D. A. Carter, Dr. E. A. Guymer, Dr. A. E. Lincoln, Dr. K. F. O'Donnell, Dr. C. E. Willing (country).

M. O. Kent Hughes, Honorary Secretary.

Melbourne Permanent Post-Graduate Committee.

The following report is published on behalf of the Melbourne Permanent Post-Graduate Committee.

Post-graduate teaching has expanded considerably during the past year. The refresher course was attended by 33 practitioners. From every State, including Tasmania, and New Zealand. An intensive course in obstetrics and synæcology followed at the Women's Hospital and was very much appreciated. Afternoon clinical demonstrations and a course of lectures on gastro-intestinal disease, provided to appeal to Melbourne practitioners, were the least successful courses of the year. The response hardly justifies the provision of such courses in the future. A series of lectures dealing with the care of civilian war casualties was very well attended, a number varying around 100 attending each lecture. The lectures will be published in The Medical Journal of Australia. Courses of clinical instruction suitable for those taking the higher medical degrees proved of value to candidates. The lectures which Dr. W. B. Castle, of America, delivered in Melbourne in 1938, were published by the committee, and the book, "Lectures on the Anæmias and Vitamin Deficiencies", distributed to subscribers at the cost of 7s. 6d. The programme for the year was distributed to practitioners in Australia and New Zealand. Lecturers were provided for country subdivisional meetings.

E. GRAEME ROBERTSON.

Honorary Secretary.

On behalf of the council,

FRANK L. DAVIES,
President.

F. KINGSLEY NORRIS,

Honorary Secretary.

C. H. DICKSON,

Medical Secretary.

On the motion of Dr. Thomas, seconded by Dr. Zwar, the Annual Report as circulated was received and adopted.

GOLF TROPHIES.

The President presented the championship cup donated by Dr. Gerald Weigall and the handicap trophy donated by Dr. D. Roseby to the respective winners, Dr. John Gray and Dr. H. W. Lording.

INSTALLATION OF PRESIDENT.

Dr. Davies installed the newly appointed President, Dr. H. C. Colville.

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Dr. Colville, in thanking members for the honour conferred on him, said that a few days previously he had studied the honour board in the entrance to the hall. Reading down the list of past Presidents of the Association he saw the names of some of the most illustrious members of the profession. It caused him to approach his task with a feeling of great humility. Every incoming President was faced with some particular problem. His two immediate predecessors, Dr. Major and Dr. Davies, had been faced with the very difficult problem of national insurance, and he felt that at this stage it would not be inappropriate to say that thanks were due to those gentlemen for the work and time they had given to bringing the profession through that difficult period. regards his term of office, there could be little doubt that the main problem would arise from the fact that the Empire was at war. In this connexion members were reminded that immediately war was declared the Branch council and the Federal Council took action to endeavour to safeguard as far as possible the interests of the medical profession engaged on military service. In Victoria the income insurance scheme was about to be put into force. The scheme was a very simple one, of which the primary object was to secure an income for men who went on service, sufficient to meet necessary commitments, by collecting from men who remained in civil life a percentage of their professional earnings. When discussing the matter with members of the profession the thing that he was particularly struck with was that the main issue had been allowed to be overshadowed by what might be regarded as details. It was evident in a scheme involving as it did financial intricacies that no matter how much work had been done on it there would be imperfections; but these were not insuperable and could be rectified as time went on. At any rate, the pleasing fact remained that sufficient members had agreed to enter into the arrangement to enable council to proceed. he had said that sufficient members had agreed to join the scheme, the fact was that about 10% of the members of the Branch had signified willingness to join, which meant that 90%, for reasons which no doubt they regarded as satisfactory, had decided to stay out of the scheme. It was to be hoped that those figures would be very much improved upon. He urged all members present to do all they could to get others to join the scheme, for which success depended entirely upon the number who joined and contributed. If the scheme was a success it would be to the credit of the profession to have achieved something which had never been accomplished before.

The retiring President then vacated the chair to Dr. Colville.

RETIRING PRESIDENT'S ADDRESS.

The retiring President delivered an address (see page 143).

On the motion of Dr. J. Newman Morris, seconded by Dr. B. T. Zwar, a vote of thanks to the retiring President was carried. Both spoke in eulogistic terms of the long and useful service rendered to members of the Branch and the profession throughout Australia by Dr. Davies.

Dr. Davies, in returning thanks, said he felt abashed at the kind things Dr. Morris and Dr. Zwar had said concerning him.

RETIRING MEMBERS OF THE COUNCIL.

The President reported with regret the retirement of Dr. J. H. Downing, Dr. D. C. Pigdon, Dr. Walter Summons and Dr. B. M. Sutherland, who had not offered themselves for reelection. He was sure that it was the desire of the meeting to record an appreciation of their services to the profession.

Sir James Barrett, in moving the motion, said he would like included the names of Dr. W. R. Angus and Dr. S. F. Sutherland, who had retired during the year. He hoped it would be taken as more than a verbal expression of gratitude. He knew the amount of time and thought necessary to devote to the affairs of council to reach decisions on troublesome questions. Realizing those things had caused him to take the attitude of supporting the council entirely. He hoped the meeting would carry the resolution with a recommendation that a letter be sent to each of the six gentlemen mentioned.

Dr. Alex. Birnie, in seconding the motion, said he agreed entirely with what Sir James had said. Only those who had served on the council could realize the amount of work done by members of the council, all of whom were engaged in active practice, to advance the profession's interests.

The motion was carried with acclamation.

DR. F. KINGSLEY NORRIS'S RETIREMENT FROM THE POSITION OF HONORRY SECRETARY.

The President said that although Dr. Norris had retired from the position of Honorary Secretary he had not retired from the council. He had been elected the previous week a member of the council and in due course would be given leave of absence by council because of his military appointment. Dr. Norris's name was therefore not included in the resolution just passed. The meeting nevertheless he knew would like to take that opportunity of saying farewell to Dr. Norris in his capacity of Honorary Secretary and to convey to him its appreciation of the work he had done for the profession. He had already spoken in the council chamber on a similar motion, and as most of the members present had heard what had been said on that occasion he would content himself with saying that Dr. Norris had done wonderful work in his capacity of Honorary Secretary and that he had carried out his duties in a manner which compared more than favourably with that of his predecessors. In losing Dr. Norris's services the Branch would be sustaining a great loss. It was, however, gratifying that the position vacated by Dr. Norris was being filled by Dr. Douglas Thomas. He had pleasure in moving a hearty vote of thanks to Dr. Norris.

Dr. F. L. Davies said he would like to add his tribute to that paid by the President. Having held the position of Honorary Secretary for a number of years, he felt somewhat ashamed when he compared the amount of work he had done with that done by Dr. Norris. He referred not only to the work done by Dr. Norris in Melbourne, but in the various country centres throughout the State-work that even many members of council were unaware of. It was only with his assumption of office as President, when it had become necessary for him to preside at meetings and visit country centres, that he had become fully aware of Dr. Norris's close attention to the affairs of the Branch. No matter what the occasion was, Dr. Norris could always be relied upon to be in attendance, carrying on with the business in hand and doing it will. He particularly wished to express his appreciation of Dr. Norris's assistance to him personally during his year of presidency.

The motion was carried with acclamation.

Dr. Norris, in responding, said that he had earlier in the evening expressed thanks for the very kind remarks made. He keenly regretted having to submit his resignation to the executive, but it was impossible for him to continue in their discharge and carry on his military duties. It was such a strange war and associated with it was so much uncertainty that when he was nominated for reelection to council he felt he should stand. But now having been elected he was afraid he must submit to the executive his resignation, or apply for leave of absence when the time came for him to leave for abroad. When he returned he would have pleasure in offering his services to the Branch again, and if it was thought that they would be of value to the profession, he trusted that they would be put to use. He felt that he had been privileged in being permitted to serve the profession and the community and he thanked members for having extended to him that privilege.

MEETING OF THE COUNCIL OF THE VICTORIAN BRANCH.

A MEETING of the Council of the Victorian Branch of the British Medical Association was held at the Medical Society Hall, East Melbourne, on December 13, 1939.

Dr. F. Kingsley Norris.

The following resolution was carried:

That this Council expresses its sincere thanks to Dr. F. Kingsley Norris for the efficient and untiring manner in which he carried out the duties of Honorary Secretary of the British Medical Association (Victorian Branch) and places on record its keen appreciation of his services. In the meticulous attention to the duties required of the honorary secretary, duties which involved not only a heavy sacrifice of time but much travelling, only a heavy sacrifice of time but much travelling, Dr. Norris showed rare executive ability and set a standard which it will be hard for his successors to follow. The Council conveys to Dr. Norris its congratulations on his appointment as Commanding Officer, Casualty Clearing Station, Second Australian Imperial Force, and wishes him every success in his new appointment. The Council furthermore trusts that the future will be replete with good health, happiness and prosperity for the retiring honorary secretary. the retiring honorary secretary.

Post-Graduate Work.

COURSE FOR MEDICAL OFFICERS OF NAVY, ARMY AND AIR FORCE.

At the request of the Director-General of Medical Services the Melbourne Permanent Post-Graduate Committee has arranged a course of lectures and demonstrations suitable for medical officers of the Navy, Army and Air Force. Some of the lectures and demonstrations have already been held. Those yet remaining are as follows.

Monday, February 5, 1940.

(At the Walter and Eliza Hall Institute.)

3 to 4 p.m.-Mr. Henry Mortensen: "Venereal Diseases".

(At the Venereal Diseases Clinic, Royal Melbourne Hospital.)

4.15 to 6 p.m.-Dr. Westmore Stephens: "The Practical Treatment of Venereal Diseases in the Army".

Wednesday, February 7, 1940.

(At the Medical Society Hall.)

3 to 4 p.m.-Dr. M. D. Silberberg: "Disordered Action of the Heart"

4.30 to 5.30 p.m.-Dr. Hume Turnbull: "Cardiac Lesions on Service".

Friday, February 9, 1940.

(At the Eye and Ear Hospital.)

3 p.m.-Dr. Mark Gardner: "Treatment of Eye Injuries and Infections"

(Interval to permit attendance upon course in tropical medicine and hygiene in Sydney.)

Monday, February 19, 1940.

(At the Walter and Eliza Hall Institute.)

3 to 4 p.m.—Mr. W. Allan Hailes: "Treatment of Infected Wounds".

4.30 to 6 p.m.—Dr. Leslie Hurley and Mr. Victor Hurley: "Medical and Surgical Treatment of Empyema and Wounds of the Chest". Major Edgar King: Demonstration of suction apparatus.

Wednesday, February 21, 1940. (At the Medical Society Hall.)

3 to 4 p.m.—Mr. Fay Maclure: "Early Treatment of Facial, Maxillary and Mandibular Injuries".
4.30 to 5.30 p.m.—Dr. W. G. D. Upjohn: "Treatment of Fractures of the Limbs".

Friday, February 23, 1940. (At the Walter and Eliza Hall Institute.)

3 to 4 p.m.-Dr. Keith Fairley: "Treatment with the

Sulphanilamides".

4.30 to 5.30 p.m.—Dr. S. O. Cowen: "Diagnosis of Fever of Obscure Origin".

Maval, Wilitary and Air Force.

APPOINTMENTS.

THE undermentioned appointments, changes et cetera have been promulgated in the Commonwealth of Australia Gazette, Numbers 152 and 161, of November 30 and December 7, 1939.

Permanent Naval Forces of the Commonwealth (Sea-Going Forces).

Antedating Seniority.—The seniority of Surgeon Lieutenant Kenneth Charles Armstrong is antedated to 2nd December, 1938.

AUSTRALIAN MILITARY FORCES.

NORTHERN COMMAND.

First Military District.

Australian Army Medical Corps.

To be Major (temporarily)—Captain S. Julius, 8th November, 1939. To be Captain (provisionally)—Godfrey James Byrne, 21st September, 1939. To be Captain (temporarily)—Harvey Sylvester Walsh, 30th October, 1939.

EASTERN COMMAND.

Command Headquarters: Staff.

Captain E. S. A. Meyers, Australian Army Medical Corps, is appointed Assistant Director of Hygiene (temporarily), 18th October, 1939, vice Major S. H. Lovell, who relinquishes the appointment on 28th August, 1939; Major J. W. Skinner, Australian Army Medical Corps, relinquishes the temporary appointment of Assistant Director of Medical Services (Dental) on 12th September, 1939.

Second Military District.

Australian Army Medical Corps.

To be Captain (provisionally)-Rex Frederick Allingham Becke, 22nd October, 1939.

SOUTHERN COMMAND.

Third Military District.

Australian Army Medical Corps.
Captain (provisionally) H. F. G. McDonald is transferred from the Australian Army Medical Corps, 1st Military District, 2nd October, 1939; the provisional appointment of Captain T. U. Ley is confirmed.

Australian Army Medical Corps Reserve. The resignation of Honorary Lieutenant R. N. Peverill of his commission is accepted, 22nd September, 1939.

Fourth Military District.

Australian Army Medical Corps Reserve.

To be Honorary Captains—Leonard James Ternouth
Pellew, Arthur James Chandler and Benjamin George
Johnston, 26th October, 1939.

WESTERN COMMAND.

Fifth Military District.

Australian Army Medical Corps Reserve. To be Honorary Lieutenant-Norman Edward Bannan, 23rd October, 1939.

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THEODORE WILLIAM VAN EPEN.

WE regret to announce the death of Dr. Theodore William van Epen, which occurred on January 25, 1940, at Narooma, New South Wales.

Mominations and Clections.

THE undermentioned has applied for election as a member of the New South Wales Branch of the British Medical Association:

Wunderlich, Theodor, M.B., 1939 (Univ. Sydney), Box 13, Balranald.

Diary for the Wonth.

FEB. 6.—New South Wales Branch, B.M.A.: Organization and Science Committee.
FEB. 7.—Victorian Branch, B.M.A.: Branch, FEB. 13.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
FEB. 13.—Tasmanian Branch, B.M.A.: Branch.
FEB. 15.—Western Australian Branch, B.M.A.: Council.
FEB. 20.—New South Wales Branch, B.M.A.: Ethics Committee.
FEB. 23.—Tasmanian Branch, B.M.A.: Council.
FEB. 27.—New South Wales Branch, B.M.A.: Medical Politics
Committee.
FEB. 28.—Victorian Branch, B.M.A.: Council.
FEB. 29.—South Australian Branch, B.M.A.: Branch.
FEB. 29.—Federal Council, B.M.A.: Meeting, Melbourne.

Wedical Appointments.

Dr. G. W. Verco has been appointed Honorary Anæsthetist at the Royal Adelaide Hospital, Adelaide.

Dr. E. C. Egan has been appointed Deputy Medical Superintendent in the Department of Mental Hospitals of New South Wales.

Dr. L. T. Baker has been appointed Medical Officer of Health to the Wagin Municipal Council, in accordance with the provisions of The Health Act, 1911-1937, of Western Australia.

Dr. J. Coffey, Dr. A. Fryberg and Dr. A. J. Turner have been appointed Members of the Nurses and Masseurs Registration Board, in pursuance of the provisions of The Nurses and Masseurs Registration Acts, 1928 to 1939, of Queensland.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser", pages xvi-xix.

BALONNE HOSPITALS BOARD, ST. GEORGE, QUEENSLAND: Medical Officer.

DEPARTMENT OF PUBLIC HEALTH, WESTERN AUSTRALIA: Medical Officers

GYMPIE HOSPITAL BOARD, GYMPIE, QUEENSLAND: Medical Superintendent.

HEATHERTON SANATORIUM, CHELTENHAM, VICTORIA: Assistant Medical Officer.

ROYAL HOSPITAL FOR WOMEN, PADDINGTON, NEW SOUTH WALES: Resident Medical Officer.

TAMWORTH BASE HOSPITAL, TAMWORTH, NEW SOUTH WALES: Resident Medical Officer.

THE BENEVOLENT SOCIETY OF NEW SOUTH WALES, SYDNEY: Honorary Officers.

Medical Appointments: Important Motice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCHES.	APPOINTMENTS.
New South Walks: Honorary Secretary, 135, Macquarie Street, Sydney.	Friendly Societies' Dispensary
Victorian: Honorary Secretary, Medical Society Hall, East Melbourne.	
QUEENSLAND: Honor- ary Secretary, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17.	Brisbane Associate Friendly Societies' Medical Institute. Proserpine District Hospital. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.
South Australian: Secretary, 178, North Terrace, Adelaide.	All Lodge appointments in South Australia. All Contract Practice Appointments in South Australia.
WESTERN AUSTRALIAN: Honorary Secretary, 205, Saint George's Terrace, Perth.	Wiluna Hospital. All Contract Practice Appointments in Western Australia.

Editorial Motices.

Manuscripts forwarded to the office of this journal cannot under any circumstances be returned. Original articles for-warded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be

All communications should be addressed to the Editor, The Medical Journal of Australia, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: MW 2651-2.)

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Subscription Rates.—Medical students and others not receiving The Medical Journal of Australia in virtue of membership of the Branches of the British Medical Association in the Commonwealth can become subscribers to the journal by applying to the Manager or through the usual agents and booksellers. Subscriptions can commence at the beginning of any quarter and are renewable on December 31. The rates are £2 for Australia and £2 5s. abroad per annum payable in advance.

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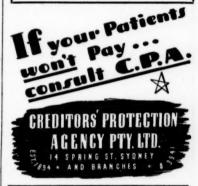
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MEDICAL OFFICER required for Dirranbandi Hospital, Queensland. Salary £650 per annum, with right of private practice. Application, stating age and enclosing copies of credentials, to be in the hands of the undersigned on or before 22nd February, 1940. Successful aplicant to commence duties on or before 23rd March, 1940. R. J. ROBERTS, Secretary, Balonne Hospitals Board, Box 14, St. George, Queensland.

Royal Victorian College of Nursing

TRAINED NURSES' HOMES REGISTERED UNDER THE R.V.C. OF N.

MRS. I. McKINNELL BEGG (late Miss A. J. McKinnell), 11 Grandview Grove, Armadale. Tel. Wind. 4379. MRS. DAWSON, Kensington Trained Nurses' Home, 5 Kensington Road, S. Yarra. Wind. 3521. MISS GOYNE, "Winfield", 340 Albert Street, E. Melbourne. Tel.: Supt., J 4136; Members, J 4137. SISTERS HARVEY and EAGLE, "Ards", 273 Dandenong Road, East St. Kilda. Tel. Wind. 116. SISTER M. HOPKINS, Warwick Court, 246 Dandenong Road, East St. Kilda. Wind. 4226. SISTER DAISY L. LESH, "St. Anne's", 354 Toorak Road, South Yarra. Tel. Wind. 2126.

MISS OXBROW, 105 Cardigan Street, Ballarat. Tel. Ballarat 443.

SISTER SADIE TYLER, "St. Margaret's", 11 George Street, East Melbourne. Tel. J 3348.

VICTORIAN TRAINED NURSES' CLUB (Miss Sheppard), 452 Lonsdale Street, Melbourne. Tel.: Sec., MU 4426; Members, MU 4338.

MISSES WALDIE and WILSON, "St. Andrews", 189 Cotham Road, Kew. Tel. Haw. 2993.

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OF AUSTRALIA

Department of Health

PERTUSSIS VACCINE

for the prophylaxis and treatment of WHOOPING COUGH

The investigations of P. H. Leslie and A. D. Gardner, of Oxford, have indicated that Hæmophilus pertussis, though a uniform species, tends to pass through a series of four phases antigenically and serologically distinct.

These authors find that strains of Phase I are of higher virulence for laboratory animals and produce a more satisfactory immunity than do the variant strains.

FOR PROPHYLAXIS

Madsen and Sauer have demonstrated that a reliable vaccine of phase I, given in large doses, will immunize an infant or a child against Whooping Cough. Three months is required for the development of full immunity.

FOR TREATMENT

Certain observers state that if vaccine of phase I be administered shortly after the child is exposed to the disease, or in the early stages of the disease, this vaccine will lessen the severity of the attack and diminish the number and the intensity of the paroxysms.

EITHER FOR PROPHYLAXIS OR FOR TREATMENT, COMMONWEALTH PERTUSSIS BACILLUS (PHASE I) VACCINE IS HIGHLY SUITABLE.

It is supplied in three strengths, as follows:

For practitioners who prefer to use a mixed vaccine, there is available Pertussis Vaccine (Mixed), supplied in three strengths, as follows:

Supplies may be obtained from the Commonwealth Serum Laboratories, Parkville, Victoria, and also from the following: Director-General of Health, Canberra; Chief Quarantine Officers (General), Anzac Square, Adelaide Street, Brisbane, Qld.; Customs House, Circular Quay, Sydney, N.S.W.; C.M.L. Building, 41-47 King William Street, Adelaide, S.A.; G.P.O., Perth, W.A.; Commonwealth Health Laboratory, Launceston, Tas.

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